

APPENDIX A

BAWSCA MEMBER AGENCIES

BAWSCA MEMBER AGENCIES

Alameda County

City of Hayward
Alameda County Water District

Santa Clara County

City of Milpitas
City of Mountain View
City of Palo Alto
City of San Jose
City of Santa Clara
City of Sunnyvale
Purissima Hills Water District
Stanford University

San Mateo County

City of Brisbane
City of Burlingame
City of Daly City
City of East Palo Alto
City of Hillsborough
City of Menlo Park
City of Millbrae
City of Redwood City
City of San Bruno
Coastside County Water District
Estero Municipal Improvement District
Guadalupe Valley Municipal Improvement Dist
Los Trancos County Water District
Mid-Peninsula Water District
North Coast County Water District
Skyline County Water District
Westborough Water District
California Water Service Company

APPENDIX B

PUBLIC OUTREACH



CITY OF MOUNTAIN VIEW

Public Works Department • 500 Castro Street • Post Office Box 7540 • Mountain View, California 94039-7540
650-903-6311 • FAX 650-903-6499

June 20, 2005

NOTICE OF PREPARATION

URBAN WATER MANAGEMENT PLAN

The Urban Water Management Plan Act (Water Code Sections 10610 to 10657) requires the City of Mountain View to update its Urban Water Management Plan (UWMP) in 2005. Revisions are being considered for the City's current UWMP, last updated in 2000, and we invite your agency to participate in the revision process.

Drafts of the updated UWMP will be available for review prior to public hearings scheduled this fall. If your agency would like to participate in the revision process, would like to be notified when the City's draft plan is available or would like more information on the UWMP, please contact:

Peter Skinner
Public Works Department
500 Castro Street
P.O. Box 7540
Mountain View, CA 94039
(650) 903-6311
peter.skinner@mountainview.gov



Peter Skinner
Senior Administrative Analyst

PS/6/PWK
904-06-17-05N-E^

cc: PWD, USM, SCE—Turner, F/c

SHA-PS

AFFIDAVIT OF PUBLICATION

IN THE

MOUNTAIN VIEW VOICE

703 High St., Palo Alto, California 94301
(650) 326-8210

RECEIVED
JUN 27 2005
PUBLIC WORKS

IN THE

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF SANTA CLARA

No. _____

City of Mountain View
Public Notice
Urban Water Management
plan update

STATE OF CALIFORNIA

COUNTY OF SANTA CLARA

} SS

I, the undersigned, state that I am, and at all times herein mentioned was, a citizen of the United States of America, over the age of eighteen years, and not a party to or interested in the above entitled matter, that I was at and during all said times and still am the principal clerk of the publisher of the Mountain View Voice, a newspaper of general circulation published weekly in the city of Mountain View in said County of Santa Clara, State of California; that said is and was at all times herein mentioned a newspaper of general circulation as that term is defined by Section 6008 of the Government Code of the State of California; that said was adjudged as such by Superior Court of the County of Santa Clara, State of California, under date of April 2, 2002, Case Number CV806609; that the notice of which the annexed is a true printed copy, was set in type not smaller than nonpareil and was preceded with words printed in black-face type not smaller than nonpareil, describing and expressing in general terms, the purport and character of the notice intended to be given; that said notice was published and printed in said newspaper on the following dates, to wit:

June 24, 2005
June 24, 2005

Date of first publication in the Mountain View Voice

I declare under penalty of perjury that the foregoing is true and correct.

Executed on

June 24, 2005

at Palo Alto, California.

Signed

Blanca yac



CITY OF MOUNTAIN VIEW
PUBLIC NOTICE

URBAN WATER
MANAGEMENT PLAN
UPDATE

The City of Mountain View is updating its Urban Water Management Plan (UWMP) for distribution this fall. Public participation is encouraged throughout the revision process. If there are topics you would like addressed in the plan, would like to be notified when the draft plan is available or would like more information on the UWMP, please contact:

Peter Skinner
Public Works Department
500 Castro Street P.O. Box 7540
Mountain View CA 94039
(650) 903-6517
uwmp@mountainview.gov

SAA-PS

RECEIVED

JUL 13 2005

PUBLIC WORKS

AFFIDAVIT OF PUBLICATION

PALO ALTO DAILY NEWS

STATE OF CALIFORNIA

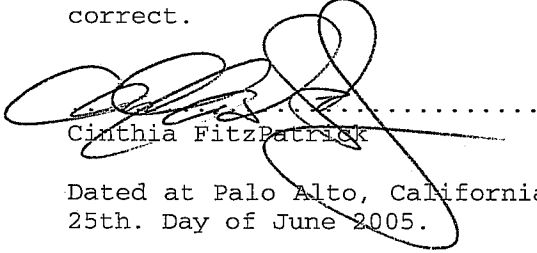
County of Santa Clara

The undersigned declares: That at all times hereinafter mentioned, affiant was a permanent resident of the United States, over the age of eighteen years old, and was at and during all said times the Classified Representative of the PALO ALTO DAILY NEWS newspaper of general circulation published daily in the County of Santa Clara, State of California. The notice mentioned was set in type no smaller than nonpareil and was preceded with words printed in black face type not smaller than size 7, describing and expressing in general terms, the purpose and character of the notice intended to be given; that the

PUBLIC NOTICE

of which the annexed is a printed copy, was published and printed in said newspapers 1 time on the 25th. Day of June 2005.

I declare under penalty of perjury that the foregoing is true and correct.


Cynthia FitzPatrick

Dated at Palo Alto, California, this 25th. Day of June 2005.



CITY OF MOUNTAIN VIEW

PUBLIC NOTICE

**URBAN WATER
MANAGEMENT PLAN
UPDATE**

The City of Mountain View is updating its Urban Water Management Plan (UWMP) for distribution this fall. Public participation is encouraged throughout the revision process. If there are topics you would like addressed in the plan, would like to be notified when the draft plan is available or would like more information on the UWMP, please contact:

Peter Skinner
Public Works Department
500 Castro Street P.O. Box 7540
Mountain View CA 94039
(650) 903-6517
uwmp@mountainview.gov

APPENDIX C

PUBLIC HEARING NOTICES



Public Works Department • 500 Castro Street • Post Office Box 7540 • Mountain View, California 94039-7540
650-903-6311 • FAX 650-903-6499

October 14, 2005

PUBLIC NOTICE

URBAN WATER MANAGEMENT PLAN ADOPTION

The Mountain View City Council will consider adopting the City's draft 2005 Urban Water Management Plan at their regularly scheduled meeting on:

Tuesday, November 15, 2005, 6:30 p.m.
City Council Chambers, Second Floor—Mountain View City Hall
500 Castro Street, Mountain View

Beginning on Tuesday, November 1, 2005, copies of the plan will be available for review at the Mountain View Public Library, 585 Franklin Street, or in the Public Works Department at Mountain View City Hall, 500 Castro Street.

An electronic copy of the plan can be mailed to you upon request or can be downloaded from the City's web site at www.mountainview.gov.

To request a copy of the plan or if you have any questions or comments, please contact:

Peter Skinner
Public Works Department
500 Castro Street, P.O. Box 7540
Mountain View, CA 94039
(650) 903-6311
peter.skinner@mountainview.gov

Peter Skinner
Senior Administrative Analyst

PS/5/PWK/904-10-14-05PN-E^

cc: City Council

CM, PWD, USM, SCE—Turner, EEM, SAA—Kiner, SAA—Skinner, F/c

AFFIDAVIT OF PUBLICATION
IN THE
MOUNTAIN VIEW VOICE

703 High St., Palo Alto, California 94301
(650) 326-8210

IN THE
SUPERIOR COURT
OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF SANTA CLARA

RECEIVED

NOV 21 2005

PUBLIC WORKS

No. _____

City of Mountain View

Public Notice

STATE OF CALIFORNIA }
COUNTY OF SANTA CLARA } SS

I, the undersigned, state that I am, and at all times herein mentioned was, a citizen of the United States of America, over the age of eighteen years, and not a party to or interested in the above entitled matter, that I was at and during all said times and still am the principal clerk of the publisher of the Mountain View Voice, a newspaper of general circulation published weekly in the city of Mountain View in said County of Santa Clara, State of California; that said is and was at all times herein mentioned a newspaper of general circulation as that term is defined by Section 6008 of the Government Code of the State of California; that said was adjudged as such by Superior Court of the County of Santa Clara, State of California, under date of April 2, 2002, Case Number CV806609; that the notice of which the annexed is a true printed copy, was set in type not smaller than nonpareil and was preceded with words printed in black-face type not smaller than nonpareil, describing and expressing in general terms, the purport and character of the notice intended to be given; that said notice was published and printed in said newspaper on the following dates, to wit:

October 28, November 4, 2005

October 28, 2005

Date of first publication in the Mountain View Voice

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 4, 2005

at Palo Alto, California.

Signed Blanca Jot

CITY OF MOUNTAIN VIEW
PUBLIC NOTICE
2005 DRAFT URBAN WATER MANAGEMENT PLAN

The Mountain View City Council will accept public comments and consider adopting the City's 2005 draft Urban Water Management Plan at their regularly scheduled meeting on:

Tuesday, November 15, 2005, 6:30 p.m.
City Council Chambers, Second Floor, Mountain View City Hall
500 Castro Street, Mountain View, California

Beginning on Tuesday, November 1, 2005, copies of the plan will be available for review at the Mountain View Public Library, 585 Franklin Street, or in the Public Works Department in Mountain View City Hall, 500 Castro Street. An electronic copy of the plan can also be found on the City's website: www.mountainview.gov

Please call (650) 903-6517 or email UWMP@mountainview.gov if you have any questions

AFFIDAVIT OF PUBLICATION

DAILY NEWS

STATE OF CALIFORNIA
County of San Mateo

The undersigned declares: That at all times hereinafter mentioned, affiant was a permanent resident of the United States, over the age of eighteen years old, and was at and during all said times the Classified Representative of the PALO ALTO DAILY NEWS newspaper of general circulation published daily in the County of San Mateo, State of California. The notice mentioned was set in type no smaller than nonpareil and was preceded with words printed in black face type not smaller than size 7, describing and expressing in general terms, the purpose and character of the notice intended to be given; that the

PUBLIC NOTICE

of which the annexed is a printed copy, was published and printed in said newspapers 2 times commencing on the 1st. Day of November 2005 and ending on the 8th. Day of November.

I declare under penalty of perjury that the foregoing is true and correct.


.....
Lois Watts

Dated at Palo Alto, California,
this 28th. Day of November 2005.



CITY OF MOUNTAIN VIEW

PUBLIC NOTICE
2005 DRAFT URBAN WATER MANAGEMENT PLAN

The Mountain View City Council will accept public comments and consider adopting the City's 2005 draft Urban Water Management Plan at their regularly scheduled meeting on:

Tuesday, November 15, 2005, 6:30 p.m.
City Council Chambers, Second Floor, Mountain View City Hall
500 Castro Street, Mountain View, California

Beginning on Tuesday, November 1, 2005, copies of the plan will be available for review at the Mountain View Public Library, 585 Franklin Street, or in the Public Works Department in Mountain View City Hall, 500 Castro Street. An electronic copy of the plan can also be found on the City's website: www.mountainview.gov.

Please call (650) 903-6517 or email UWMP@mountainview.gov if you have any questions.

APPENDIX D

ADOPTED CITY COUNCIL RESOLUTION

CITY OF MOUNTAIN VIEW
RESOLUTION NO. 17037
SERIES 2005

Dated: 11/23/05 Patty James
Deputy City Clerk

A RESOLUTION APPROVING THE
CITY OF MOUNTAIN VIEW'S 2005 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature enacted the Urban Water Management Planning Act mandating suppliers of water for municipal purposes to more than 3,000 customers to prepare an Urban Water Management Plan; and

WHEREAS, the City is an urban water supplier serving over 70,000 people; and

WHEREAS, the Plan is required to be reviewed and updated every five years; and

WHEREAS, after public review and hearing, the updated 2005 Plan must be adopted by the City Council and filed with the California Department of Water Resources by December 31, 2005; and

WHEREAS, the City has prepared and circulated a draft of the Urban Water Management Plan for public review and properly noticed a public hearing held by the City Council on November 15, 2005; and

WHEREAS, the Mountain View City Council considered the Urban Water Management Plan on November 15, 2005;

NOW, THEREFORE, BE IT RESOLVED that the City of Mountain View:

1. Adopt the Mountain View 2005 Urban Water Management Plan.
 2. Authorize the Public Works Director, or designee, to file the Plan with the California Department of Water Resources by December 31, 2005.
 3. Direct Public Works Department staff to file the Plan with the City Clerk.
-

The foregoing Resolution was regularly introduced and adopted at a Special Meeting of the City Council of the City of Mountain View, duly held on the 15th day of November, 2005, by the following vote:

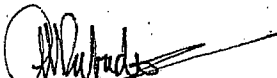
AYES: Councilmembers Galiotto, Kasperzak, Macias, Means, Pear and Mayor Neely

NOES: Councilmember Perry

ABSENT: None

NOT VOTING: None

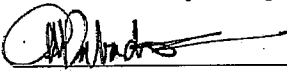
ATTEST:


ANGELITA M. SALVADOR
CITY CLERK

APPROVED:


MATT NEELY
MAYOR

I do hereby certify that the foregoing resolution was passed and adopted by the City Council of the City of Mountain View at a Special Meeting held on the 15th day of November, 2005, by the foregoing vote.

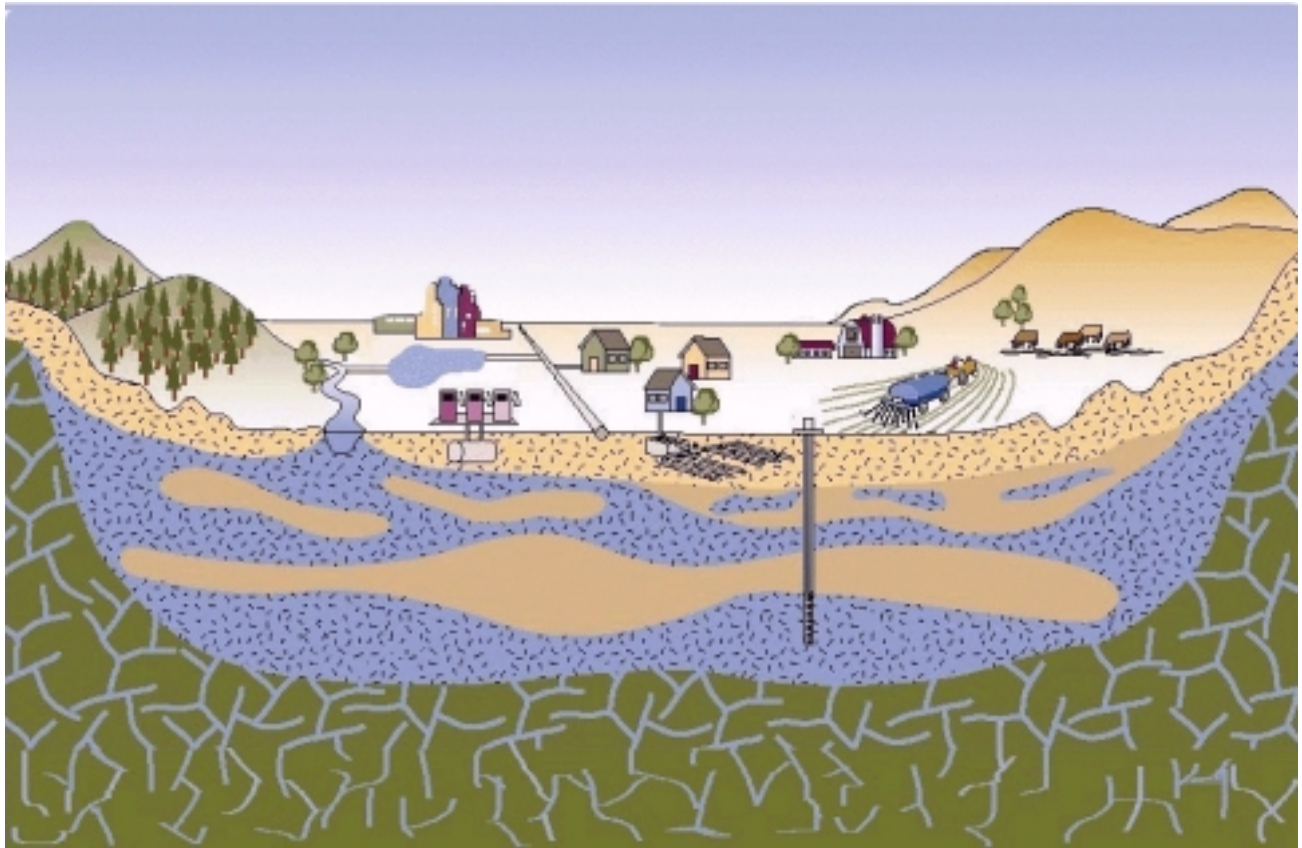

City Clerk
City of Mountain View

PS/5/RESO
904-10-12-05R-E^

APPENDIX E

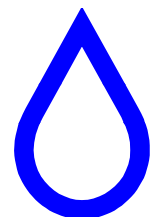
2001 SANTA CLARA VALLEY WATER DISTRICT GROUNDWATER MANAGEMENT PLAN

Santa Clara Valley Water District Groundwater Management Plan



July 2001

Santa Clara Valley Water District



SANTA CLARA VALLEY WATER DISTRICT

Santa Clara Valley Water District Groundwater Management Plan

Prepared by

Vanessa Reymers
Tracy Hemmeter

Assistant Engineer II
Program Administrator

Under the direction of

Behzad Ahmadi
Unit Manager
Groundwater Management Unit

Keith Whitman
Deputy Operating Officer
Water Supply Management Division

Walter L. Wadlow
Chief Operating Officer
Assistant General Manager

DISTRICT BOARD OF DIRECTORS

Rosemary Kamei, Vice Chair	District 1	Tony Estremera, Chair	At Large
Joe Judge	District 2	Sig Sanchez	At Large
Richard P. Santos	District 3		
Larry Wilson	District 4		
Greg Zlotnick	District 5		

ACKNOWLEDGMENTS

OVERSIGHT MANAGER

Keith Whitman
Deputy Operating Officer
Water Supply Management Division

PROJECT SPONSOR

William G. Molnar

PROJECT MANAGER

Behzad Ahmadi

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Executive Summary

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Vanessa Reymers

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Vanessa Reymers

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Behzad Ahmadi
Tracy Hemmeter

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Behzad Ahmadi
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Robert Kenton
Jeffrey Micko
Karen Morvay
Vanessa Reymers
Miguel Silva

Groundwater Monitoring

Behzad Ahmadi
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Summary

Vanessa Reymers

The authors would like to extend a special thanks to William G. Molnar for his support, assistance, and guidance on this project.

Special acknowledgment is also given to the following people for their technical contributions, support, and feedback: James Crowley, Michael Duffy, Nai Hsueh, Tom Iwamura, Karen Kianpour, Carol Nigh, Sandy Oblonsky, and Sue Tippetts.

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ACRONYMS USED

af – acre-feet
BMP – Best Management Practices
CEQA – California Environmental Quality Act
CIMIS – California Irrigation Management Information System
CVP – Central Valley Project
DEIR – Draft Environmental Impact Report
DRASTIC – Depth to water table, net Recharge, Aquifer media, Soil media,
Topography, Impact of the vadose zone, and hydraulic Conductivity
DWR – Department of Water Resources
DWSAP – Drinking Water Source Assessment and Protection
EIR – Environmental Impact Report
EPA – Environmental Protection Agency
GIS – Geographic Information Systems
InSAR – Interferometric Synthetic Aperture Radar
IWRP – Integrated Water Resources Plan
LUSTOP – Leaking Underground Storage Tank Oversight Program
MCL – Maximum Contaminant Level
MOU – Memorandum of Understanding
MTBE – Methyl Tert Butyl Ether
NPDES – National Pollution Discharge Elimination System
NTU – Nephelometric Turbidity Unit
PCB - Polychlorinated biphenyl
RWQCB – Regional Water Quality Control Board
SBA – South Bay Aqueduct
SBWRP – South Bay Water Recycling Program
SCRWA – South County Regional Wastewater Authority
SCVWCD – Santa Clara Valley Water Conservation District
SCVWD – Santa Clara Valley Water District
SWRCB – State Water Resources Control Board
USGS – United States Geological Survey
UST – Underground Storage Tank
VOC – Volatile Organic Compound
WHP – Wellhead Protection Program
WMI – Watershed Management Initiative
WTP – Water Treatment Plant

EXECUTIVE SUMMARY

The Santa Clara Valley Water District (District) has managed the groundwater basin in Santa Clara County (County) since the early 1930s and is nationally recognized as a leader in groundwater management. The District works in conjunction with local retailers, the Regional Water Quality Control Board, and other agencies to ensure a safe and healthy supply of groundwater. In 2000, the groundwater basin supplied nearly half of the 390,000 acre-feet used in the County.

The District is the groundwater management agency in Santa Clara County as authorized by the California legislature under the Santa Clara Valley Water District Act (District Act), California Water Code Appendix, Chapter 60. Since its creation, the District has worked to minimize subsidence and protect the groundwater resources of the County under the direction of the District Act. As stated in the District Act, the District's objectives related to groundwater management are to recharge the groundwater basin, conserve water, increase water supply, and to prevent waste or diminution of the District's water supply.

The mission of the District is a healthy, safe, and enhanced quality of living in Santa Clara County through the comprehensive management of water resources in a practical, cost-effective, and environmentally-sensitive manner. In the Global Governance Commitment adopted by the District Board of Directors, it is stated that the conjunctive management of the groundwater basins is an integral part of the District's comprehensive water supply management program.

The District has always effectively managed the groundwater basin to fulfill the objectives of the District Act and its mission. The goal of these groundwater management efforts has been, and continues to be, ***to ensure that groundwater resources are sustained and protected.***

The Groundwater Management Plan formally documents the District's groundwater management goal and describes programs in place that are designed to meet that goal. The following programs are documented in the plan:

- Groundwater supply management programs that replenish the groundwater basin, sustain the basin's water supplies, help to mitigate groundwater overdraft, and sustain storage reserves for use during dry periods.
- Groundwater monitoring programs that provide data to assist the District in evaluating and managing the groundwater basin.
- Groundwater quality management programs that identify and evaluate threats to groundwater quality and prevent or mitigate contamination associated with those threats.

This plan serves as the first step toward a more formal and integrated approach to the management of groundwater programs, and to the management of the basin overall. The

various groundwater management programs and activities described in this document demonstrate that the District is proactive and effective in protecting the County's groundwater resources.

Recommendations

The groundwater management programs described in the Groundwater Management Plan were developed and implemented before the Board of Directors adopted the Ends Policies in 1999, and were therefore not driven by these formally documented ends. As the District is now guided by these policies, we need to ensure that the outcomes of our groundwater management programs match those of the Ends Policies. In addition, we need to ensure that existing programs are integrated and effective in terms of achieving the District's groundwater management goal.

Although the District manages the basin effectively, there is room for improvement of the groundwater management programs in terms of meeting these outcomes. Specific areas where further analysis is recommended include:

- 1. Coordination between the Groundwater Management Plan and the Integrated Water Resources Plan (IWRP)** – As the District's water supply planning document through year 2040, the IWRP has identified the operation of the groundwater basin as a critical component to help the District respond to changing water supply and demand conditions. Planning and analysis efforts for future updates of the Groundwater Management Plan and the IWRP need to be integrated in order to provide a coordinated and comprehensive water supply plan for Santa Clara County.
- 2. Integration of groundwater management programs and activities** – Individual groundwater management programs tend to be implemented almost independently of other programs. A more integrated approach to the management of these programs, and to the management of the basin overall needs to be developed. Integration of these programs and improved conjunctive use strategies will result in more effective basin management.
- 3. Optimization of recharge operations** – As artificial recharge is critical to sustaining groundwater resources, an analysis of the most effective amount, location, and timing of recharge should be conducted.
- 4. Improved understanding of the groundwater basin** – In general, the existing groundwater management programs seem to focus on managing the basin to meet demands and protecting the basin from contamination and the threat of contamination. However, improving the District's understanding of the complexity of the groundwater basin is critical to improved groundwater management. The more we know about the basin, the better we can analyze the impact of different groundwater scenarios and management alternatives.
- 5. Effective coordination and communication with internal and external agencies** – Improved communication and coordination will lead to improved groundwater

management programs. Increased sharing of ideas, knowledge, and technical expertise among people involved with groundwater at the District will result in increased knowledge, well-coordinated and efficient work, and well-informed analyses and conclusions. Improved coordination with external agencies, such as retailers and state and federal organizations, will result in improved knowledge of customer needs and increased awareness of District activities.

A detailed analysis of these areas and of all groundwater programs as they relate to the Ends Policies and the groundwater management goal is recommended. District staff have already begun to address some of these issues, which will be fully discussed in the first update to the Groundwater Management Plan. The update, which is scheduled for 2002, will fully address the issues above and the overall management of the basin by presenting a formal groundwater management strategy. The update will evaluate each groundwater program's contribution and effectiveness in terms of the groundwater management goal and outcomes directed by the Ends Policies. If there is no direct connection between the Ends Policies and a specific program, that program's contribution to other linked programs will be analyzed. The update will include recommendations for changes to existing programs or for the development of new programs, standards, or ordinances. The update will also develop an integrated approach for the management of groundwater programs, and for the management of the groundwater basin in general.

Groundwater is critical to the water supply needs of Santa Clara County. Therefore, it is of the utmost importance that the District continues the progress begun with this Groundwater Management Plan. Increased demands and the possibility of reduced imported water in the future make effective and efficient management of the groundwater basin essential. The Groundwater Management Plan and future updates will identify how the management of the groundwater basin can be improved, thereby ensuring that groundwater resources will continue to be sustained and protected.

Chapter 1

INTRODUCTION

The Santa Clara Valley Water District (District) has managed the groundwater basin in Santa Clara County (County) since the early 1930s and is nationally recognized as a leader in groundwater management. Effective management of the groundwater basin is essential, as the groundwater basin provides nearly half of the County's overall water supply. Since its creation, the District has implemented numerous groundwater management programs and activities to manage the basin and to ensure a safe and healthy supply of groundwater.

Purpose

The purpose of this Groundwater Management Plan is to describe existing groundwater management programs and to formally document the District's groundwater management goal of ensuring that groundwater resources are sustained and protected. The following groundwater management programs are documented in this plan:

- Groundwater supply management programs that replenish the groundwater basin, sustain the basin's water supplies, help to mitigate groundwater overdraft, and sustain storage reserves for use during dry periods.
- Groundwater monitoring programs that provide data to assist the District in evaluating and managing the groundwater basin.
- Groundwater quality management programs that identify and evaluate threats to groundwater quality and prevent or mitigate contamination associated with those threats.

Background

The District is the groundwater management agency in Santa Clara County as authorized by the California legislature under the Santa Clara Valley Water District Act (District Act), California Water Code Appendix, Chapter 60. Since its creation, the District has worked to minimize subsidence and protect the groundwater resources of the County under the direction of the District Act. As stated in the District Act, the District's objectives related to groundwater management are to recharge the groundwater basin, conserve water, increase water supply, and to prevent waste or diminution of the District's water supply. The District Act also provides the District with the authority to levy groundwater user fees and to use those revenues to manage the County's groundwater resources.

The mission of the District is a healthy, safe, and enhanced quality of living in Santa Clara County through the comprehensive management of water resources in a practical, cost-effective, and environmentally-sensitive manner. As part of the District's Global Governance Commitment adopted by the Board of Directors, "the District will provide a healthy, clean, reliable, and affordable water supply that meets or exceeds all applicable water quality regulatory standards in a cost-effective manner. Utilizing a variety of water supply sources and strategies, the District will pursue a comprehensive water

management program both within the county and statewide that reflects its commitment to public health and environmental stewardship.” The policy also states that the conjunctive management of the groundwater basins to be an integral part of the District’s comprehensive water supply management program.

The District has always effectively managed the groundwater basin to fulfill the objectives of the District Act and its mission. The goal of these efforts has been, and continues to be, to sustain and protect groundwater resources.

This Groundwater Management Plan is the District's first step toward a more formal and integrated approach to groundwater management. This Groundwater Management Plan describes existing groundwater management programs and formally documents the District’s groundwater management goal, which is *to ensure that groundwater resources are sustained and protected*.

Report Contents

The structure of the Groundwater Management Plan is outlined below. Chapters 3 through 5, which pertain to specific groundwater management programs, are organized to provide program objectives, related background information, the current status of the program, and information on the future direction of each program.

- Chapter 1 (this Introduction)
- Chapter 2 describes the geography and geology of the County as well as the history of local groundwater use. The chapter also describes the development of District facilities, and explains the various components of the existing water conservation and distribution system. A brief discussion on current groundwater conditions is also presented.
- Chapter 3 describes District groundwater supply management programs that replenish the groundwater basin, sustain the basin’s supplies, and/or help in mitigating groundwater overdraft. In addition, the chapter summarizes the role of groundwater in the District’s overall water supply outlook, and describes water use efficiency programs for groundwater users.
- Chapter 4 describes groundwater monitoring programs that provide data to assist the District in evaluating groundwater basin management.
- Chapter 5 describes groundwater quality management programs that evaluate groundwater quality and protect the groundwater from contamination and the threat of contamination.
- Chapter 6 summarizes existing groundwater management programs and activities designed to sustain and protect groundwater resources and provides recommendations for future work.

Chapter 2

BACKGROUND

This chapter describes the study area as well as the history of local groundwater use and the development of District facilities. Various components of the District's existing water conservation and distribution system are also described. A brief discussion on current groundwater conditions is also presented.

Geography

Santa Clara County is located at the southern tip of the San Francisco Bay. It encompasses approximately 1,300 square miles, making it the largest of the nine Bay Area counties. The County contributes about one fourth of the Bay Area's total population and more than a quarter of all Bay Area jobs.

Figure 2-1
Location of Santa Clara County



The County boasts a combination of physical attractiveness, economic diversity, and numerous natural amenities. Major topographical features include the Santa Clara Valley, the Diablo Range to the east, and Santa Cruz Mountains to the west. The Baylands lie in the northwestern part of the County, adjacent to the waters of the southern San Francisco Bay.

History of the County's Groundwater

Water has played an important part in the development of Santa Clara County since the arrival of the Spaniards in 1776. Unlike the indigenous peoples, who for thousands of years depended upon the availability of wild food, the Spaniards cultivated food crops and irrigated with surface water. Population growth and the United States' conquest of the area in 1846 increased the demand for these crops, which forced the use of the groundwater basin. Groundwater was drawn to the surface by windmill pumps or flowed up under artesian conditions. The first well was drilled in the early 1850s in San Jose.

By 1865, there were close to 500 artesian wells in the valley and already signs of potential misuse of groundwater supplies. In the valley's newspapers a series of editorials and letters appeared which complained of farmers and others who left their wells uncapped, and blamed them for a water shortage and erosion damage to the lowlands.

As a result of several dry years in the late 1890s, more and more wells were sunk. Dry winters in the early 1900s were accompanied by a growing demand for the County's fruits and vegetables, which were irrigated with groundwater. This trend of increased irrigation and well drilling continued until 1915. During this period, less water replenished the groundwater basin than was taken out, causing groundwater levels to drop rapidly.

In 1913 a group of farmers asked the federal government for relief from the increased cost of pumping that resulted from a lower groundwater table. The farmers formed an irrigation district to investigate possible reservoir sites; however, the following year was wet and no action was taken. It was not until 1919 that the Farm Owners and Operators Association presented a resolution to the County Board of Supervisors expressing their strong opposition to the waste resulting from the use of artesian wells, and again raised the issue of building dams to supplement existing water supplies. By that year subsidence of 0.4 ft had occurred in San Jose. Between 1912 and 1932 subsidence ranged from 0.35 ft in Palo Alto to 3.66 ft in San Jose.

In 1921, a report was presented to the Santa Clara Valley Water Conservation Committee showing that far more water was being pumped from the ground than nature could replace. The committee planned to form a water district that differed from others in the state by having a provision for groundwater recharge. Their effort to form the water district failed, but they were able to implement several water recharge and conservation programs. It was not until 1929 that the County's voters approved the Santa Clara Valley Water Conservation District (SCVWCD), with the initial mission of stopping groundwater overdraft and ground surface subsidence.

District History

The SCVWCD was the forerunner of today's District, which was formed through the consolidation and annexation of other flood control and water districts within Santa Clara County. By 1935, the District had completed the construction of Almaden, Calero, Guadalupe, Stevens Creek, and Vasona dams to impound winter waters for recharge into percolation facilities during the summer. Later dams completed include Coyote in 1936, Anderson in 1950 and Lexington in 1952. The Gavilan Water District in the southern

portion of the County constructed Chesbro Dam in 1955 and Uvas Dam in 1957. These dams enabled the District to capture surface water runoff and release it for groundwater recharge.

The late 1930s to 1947 marked a period of recovery in groundwater levels that reduced subsidence. In 1947 conditions became dry, groundwater levels declined rapidly and subsidence resumed. In 1950 almost all of the County's water requirements were met by water extracted from the groundwater basin. This resulted in an all-time low water level in the northern subbasin.

In 1952, the first imported water was delivered by the water retailers in northern Santa Clara County through the Hetch-Hetchy southern aqueduct. By 1960, the population of the County had doubled from that of 1950. To supply this growth, groundwater pumping increased and groundwater levels continued to decline. By the early 1960s, it was evident that the combination of Hetch-Hetchy and local water supplies could not meet the area's water demands, so the District contracted with the state to receive an entitlement of 100,000 acre-feet (af) per year through the South Bay Aqueduct (SBA).

The SBA supply could not be fully utilized for recharge in the groundwater basin. Hence, to supplement the basin, the District constructed its first water treatment plant (WTP), Rinconada. In 1967, the District started delivering treated surface water to North County residents (North County refers to the Santa Clara Valley Subbasin), thus reducing the need for pumping. This led to a recovery of groundwater levels and reduced the rate of subsidence as well.

From 1960 to 1970 the County's population nearly doubled yet again. The semiconductor and computer manufacturing industries contributed to almost 34 percent of the job growth between 1960 and 1970. Population growth and economic diversity seemed especially important to Santa Clara County, which had been predominantly agricultural. This transformation was not without its problems. In the early 1980s a major underground tank storing a solvent for a manufacturing process in south San Jose was discovered to be leaking and the District's attention focused on water quality of the groundwater basin.

The growth and prosperity of the County continued, and jobs grew 39 percent between 1970 and 1980. In 1974, Penitencia (the District's second WTP) started delivering treated water. Groundwater pumping accounted for about half of the total water use by the mid-1980s. The rate of subsidence was reduced to about 0.01 ft/year compared to 1 ft/year in 1961. To provide a reliable source of supply the District contracted with the federal government for the delivery of an entitlement of 152,500 af per year of imported water from the Central Valley Project (CVP) through the San Felipe Project. The first delivery of San Felipe water took place in 1987, but it was not until 1989 that the District's Santa Teresa WTP was began operating to fully utilize this additional source of imported supply. Since the 1980s, the population of Santa Clara County has continued to increase, and the change in land use toward urbanization has continued.

District Board of Directors

The District is governed by a seven-member Board of Directors. Five of the members are elected, one from each of the five County supervisorial districts, and the remaining two directors are appointed by the Santa Clara County Board of Supervisors to represent the County at large. The directors serve overlapping four-year terms.

The Board establishes policy on the District's mission, goals, and operations and represents the general public in deciding issues related to water supply and flood control. The Board also has the authority to adopt ordinances that have the force of law within the District. The Board reviews staff recommendations and decides which policies should be implemented in light of the District's mission and goals. The Board also monitors the implementation of its policies, and supervises management to see that work is accomplished on time and efficiently.

The Board of Directors holds biweekly public meetings, at which the public is given the opportunity to express opinions or voice concerns. In addition, the public can participate in the annual process of groundwater rate setting through public hearings.

The Board of Directors identifies the conjunctive management of the groundwater basins to maximize water supply reliability as an integral part of the District's commitment to a comprehensive water management program.

District System

As a water resource management agency for the entire County, the District provides a reliable supply of high-quality water to 13 private and public water retailers serving more than 1.7 million residents, and to private well owners who rely on groundwater.

The District operates and maintains a Countywide conservation and distribution system to convey raw water for groundwater recharge and treated water for wholesale to private and public retailers. The components of this distribution system are described in detail below.

Reservoirs

Local runoff is captured in reservoirs within the County with a combined capacity of about 169,000 af. The stored water is released for beneficial use at a later time. The District's reservoirs are described in Table 2-1 and are shown in Figure 2-2.

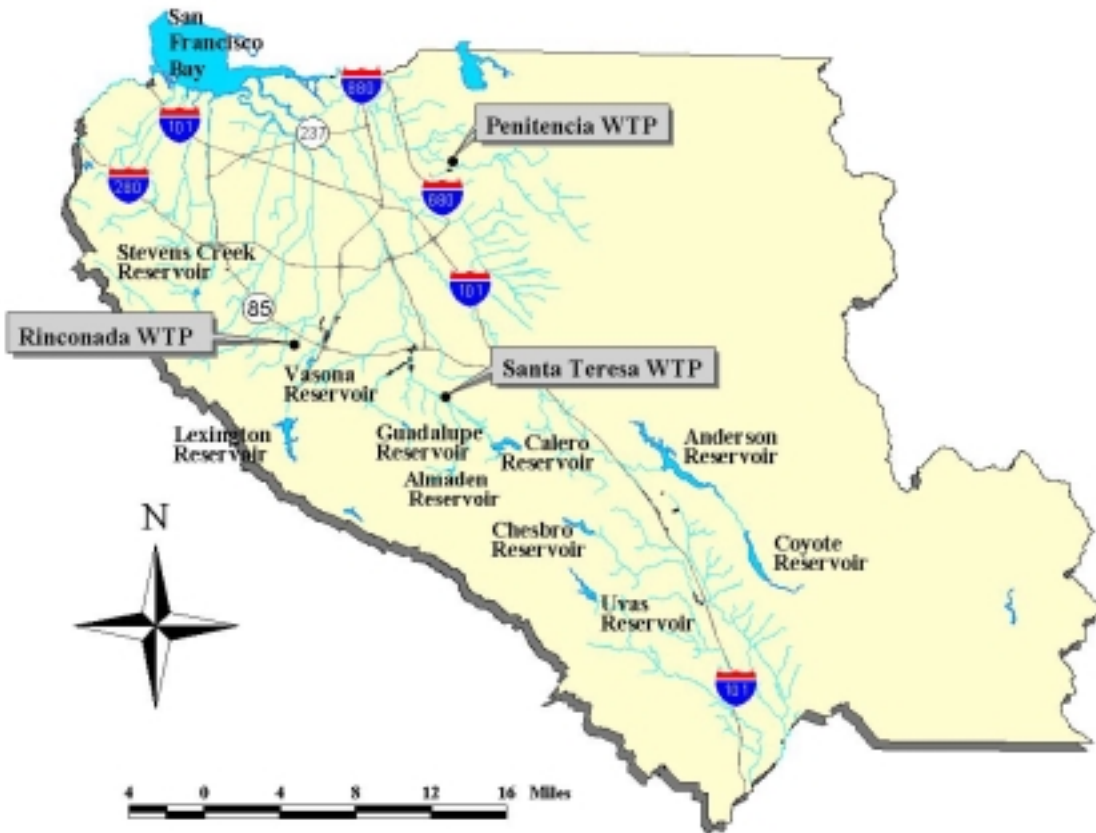
Treatment Plants

The District also operates three water treatment plants (WTPs): Rinconada, Penitencia, and Santa Teresa. These facilities are all connected by five major raw water conduits, which also connect the two imported raw water sources from the State Water Project (SWP) and the CVP. Two pumping plants (Coyote and Vasona) provide the lifts required for conveyance during peak usage.

Table 2-1
District Reservoirs

<i>Reservoir</i>	<i>Capacity(af)</i>	<i>Year Completed</i>	<i>Surface Area (ac)</i>	<i>Dam Height (ft)</i>
<i>Almaden</i>	<i>1,586</i>	<i>1935</i>	<i>59</i>	<i>108</i>
<i>Anderson</i>	<i>89,073</i>	<i>1950</i>	<i>1,245</i>	<i>240</i>
<i>Calero</i>	<i>10,050</i>	<i>1935</i>	<i>347</i>	<i>98</i>
<i>Chesbro</i>	<i>8,952</i>	<i>1955</i>	<i>265</i>	<i>95</i>
<i>Coyote</i>	<i>22,925</i>	<i>1936</i>	<i>648</i>	<i>138</i>
<i>Guadalupe</i>	<i>3,228</i>	<i>1935</i>	<i>79</i>	<i>129</i>
<i>Lexington</i>	<i>19,834</i>	<i>1952</i>	<i>475</i>	<i>195</i>
<i>Stevens Creek</i>	<i>3,465</i>	<i>1935</i>	<i>91</i>	<i>129</i>
<i>Uvas</i>	<i>9,935</i>	<i>1957</i>	<i>286</i>	<i>105</i>
<i>Vasona</i>	<i>400</i>	<i>1935</i>	<i>57</i>	<i>30</i>

Figure 2-2
District Reservoir Locations



Recharge Facilities

The Districts operates and maintains 18 major recharge systems, which consist of a combination of off-stream and in-stream facilities. These systems have a combined pond surface recharge area of more than 390 acres, and contain over 30 local creeks for artificial in-stream recharge to replenish the groundwater basin. The total annual average recharge capacity of these systems is 157,200 af.

Groundwater Basins

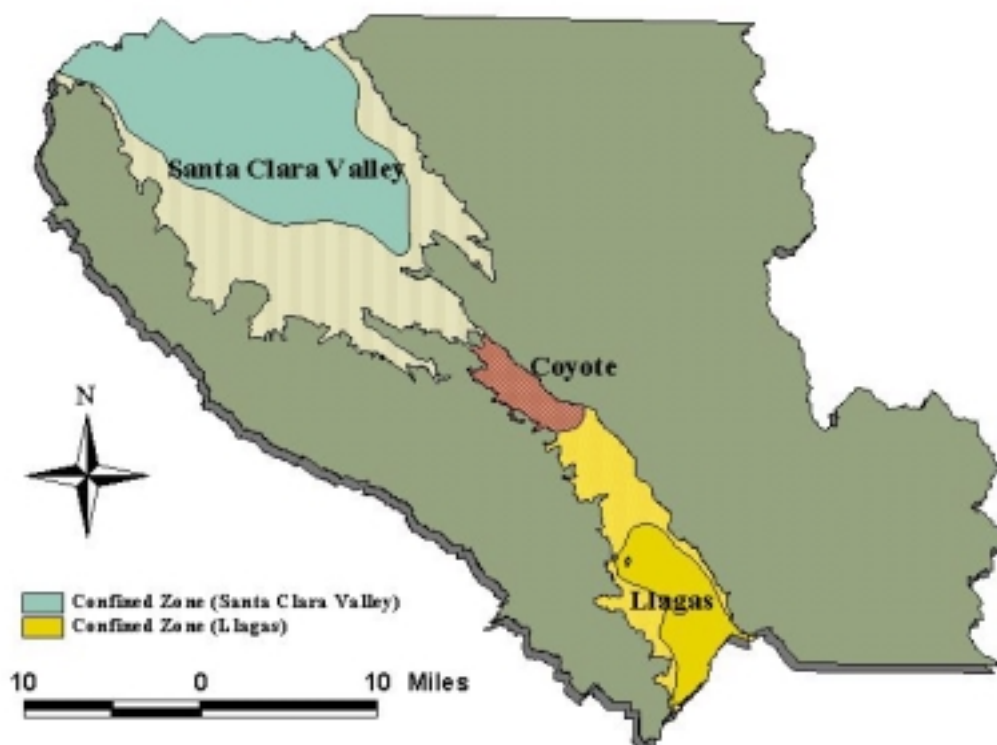
The groundwater basin is divided into three interconnected subbasins that transmit, filter, and store water. These subbasins are portrayed in Figure 2-3. The Santa Clara Valley Subbasin in the northern part of the County extends from Coyote Narrows at Metcalf road to the County's northern boundary. The Diablo Range bounds it on the east and the Santa Cruz Mountains on the west. These two ranges converge at the Coyote Narrows to form the southern limits of the subbasin. The Santa Clara Valley Subbasin is approximately 22 miles long and 15 miles wide, with a surface area of 225 square miles. A confined zone within the northern areas of the subbasin is overlaid with a series of clay layers resulting in a low permeability zone. The southern area is the unconfined zone, or forebay, where the clay layer does not restrict recharge.

The Coyote Subbasin extends from Metcalf Road south to Cochran Road, where it joins the Llagas Subbasin at a groundwater divide. The Coyote Subbasin is approximately 7 miles long and 2 miles wide and has a surface area of approximately 15 square miles. The subbasin is generally unconfined and has no thick clay layers. This subbasin generally drains into the Santa Clara Valley Subbasin.

The Llagas Subbasin extends from Cochran Road, near Morgan Hill, south to the County's southern boundary. It is connected to the Bolsa Subbasin of the Hollister Basin and bounded on the south by the Pajaro River (the Santa Clara - San Benito County line). The Llagas Subbasin is approximately 15 miles long, 3 miles wide along its northern boundary, and 6 miles wide along the Pajaro River. A series of interbedded clay layers, which extends north from the Pajaro River, divides this subbasin into confined and forebay zones.

The three subbasins serve multiple functions. They transmit water through the gravelly alluvial fans of streams into the deeper confined aquifer of the central part of the valley. They filter water, making it suitable for drinking and for municipal, industrial, and agricultural uses. They also have vast storage capacity, together supplying as much as half of the annual water needs of the County. In 2000, the groundwater basin supplied 165,000 acre-feet of the total water use of 390,000 acre-feet.

Figure 2-3
Santa Clara County Groundwater Subbasins



Current Groundwater Conditions

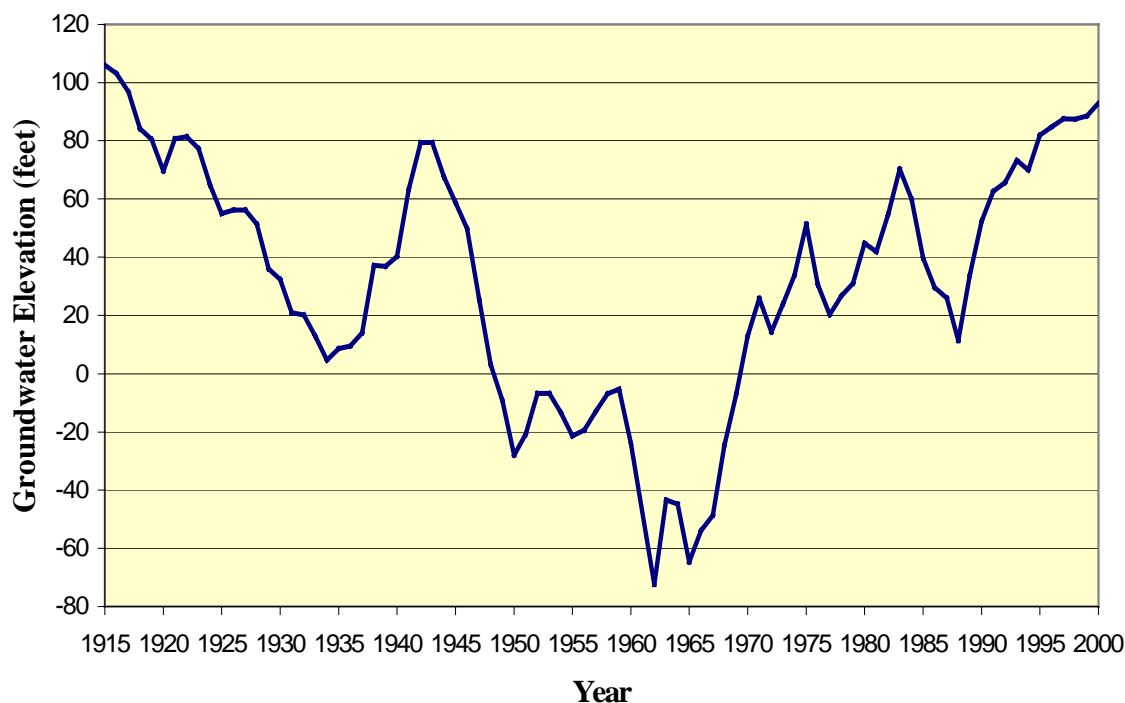
Groundwater conditions throughout the County are generally very good, as District efforts to prevent groundwater basin overdraft, curb land subsidence, and protect water quality have been largely successful. Groundwater elevations are generally recovered from overdraft conditions throughout the basin, inelastic land subsidence has been curtailed, and groundwater quality supports beneficial uses. The District evaluates current groundwater conditions based on the results of its groundwater monitoring programs, which are described in Chapter 4 of this plan.

Groundwater Elevations

Groundwater elevations are affected by natural and artificial recharge and groundwater extraction, and are an indicator of how much groundwater is in storage at a particular time. Both low and high elevations can cause severe, adverse conditions. Low groundwater levels can lead to land subsidence and high water levels can lead to nuisance conditions for below ground structures.

Figure 2-4 shows groundwater elevations in the San Jose Index Well in the Santa Clara Valley Subbasin. While groundwater elevations in the well are not indicative of actual groundwater elevations throughout the County, they demonstrate relative changes in groundwater levels.

Figure 2-4
Groundwater Elevations in San Jose Index Well



Land Subsidence

Land subsidence occurs in the Santa Clara Valley when the fluid pressure in the pores of aquifer systems is reduced significantly by overpumping, resulting in the compression of clay materials and the sinking of the land surface. Historically, the Santa Clara Valley Subbasin has experienced as much as 13 feet of inelastic, or nonrecoverable, land subsidence that necessitated the construction of additional dikes, levees, and flood control facilities to protect properties from flooding. The costs associated with inelastic land subsidence are high, as it can lead to saltwater intrusion that degrades groundwater quality and flooding that damages buildings and infrastructure. However, imported water from the State Water Project and Central Valley Project has increased District water supplies, reducing the demand on the groundwater basin, and providing water for the recharge of the basin. As a result, the rate of inelastic land subsidence has been curtailed to less than 0.01 feet per year.

Groundwater Quality

Natural interactions between water, the atmosphere, rock minerals, and surface water control groundwater quality. Anthropogenic (man-made) compounds released into the environment, such as nitrogen-based fertilizer, solvents, and fuel products, can also affect groundwater quality. Groundwater quality in the Santa Clara Valley Subbasin is generally high. Drinking water standards are met at public water supply wells without the use of treatment methods.

A few water quality problems have been detected. High mineral salt concentrations have been identified in the upper aquifer zone along San Francisco Bay, the lower aquifer zone underlying Palo Alto, and the southeastern portion of the forebay area of the Santa Clara Valley Subbasin. Nitrate concentrations in the South County (Coyote and Llagas Subbasins) are elevated and high nitrate concentrations are sporadically observed in the Santa Clara Valley Subbasin. Lastly, even though Santa Clara County is home to a large number of Superfund sites, there are few groundwater supply impacts from the chemicals from these sites; volatile organic compounds (VOCs) are intermittently detected at trace concentrations in public water supply wells. In four wells, such contamination has been severe enough to cause the wells to be destroyed. Overall, the District's groundwater protection programs, including its well permitting, well destruction, and leaking underground storage tank programs, have been effective in protecting the groundwater basin from contamination.

Water quality data for common inorganic compounds during the period from 1997 through 2000 are summarized in Table 2-2. The typical concentration ranges were computed using standard statistical methods. Organic compounds were nondetectable in almost all wells and below drinking water standards in all wells. Data for organic compounds, including MTBE, solvents, and pesticides is not shown in Table 2-2 due to the large number of compounds.

Table 2-2
Summary of Santa Clara County Groundwater Data (1997-2000)
and Water Quality Objectives^a

Constituents	Santa Clara Valley Subbasin		Coyote Subbasin	Llagas Subbasin	Drinking Water Standard	Ag. Objective ^f
	Principal Aquifer Zone ^d	Upper Aquifer Zone ^d				
Chloride (mg/l)	40 – 45	92 – 117	16 – 27	24 -52	500 ^{c,e}	355
Sulfate (mg/l)	37 – 41	106 – 237	32 - 65	32 -65	500 ^{c,e}	-
Nitrate (mg/l)	15 – 18	0.002 – 4	12 -38	44 -47	45 ^b	30
Total Dissolved Solids (mg/l)	366 – 396	733 – 1210	250 - 490	320 -540	1000 ^{c,e}	10,000
Sodium Adsorption Ratio	0.89 - 1.26	1.23 - 3.84	NA	NA	-	9
Electrical Conductance (uS/cm at 25 C)	596 - 650	1090 – 1590	375 - 391	500 - 715	1600 ^{c,e}	3000
Aluminum (ug/l)	6 - 18	23 – 97	<5 - 86	5 -51	1000 ^b	20,000
Arsenic (ug/l)	0.7- 1.2	1.2 – 3.7	<2	<2	50 ^b	500
Barium (ug/l)	141 - 161	60 – 220	71 - 130	99 - 180	1000 ^b	-
Boron (ug/l)	115 - 150	200 – 523	81 - 119	82 -159	-	500
Cadmium (ug/l)	<1	<0.5	< 0.5	<0.5	5 ^b	500
Chromium (ug/l)	6 – 8	0.5 – 1.8	0.5 - 10	2 - 10	50 ^b	1000
Copper (ug/l)	1.9 – 4.4	0.3 – 1	<1 - 50	0.75 – 3.90	1000 ^c	-
Fluoride (mg/l)	0.13 – 0.16	0.15 – 0.3	0.12 – 0.21	0.12 – 0.17	1.8 ^b	15
Iron (ug/l)	10 – 38	40 – 160	19 - 100	14 - 170	300 ^c	20,000
Lead (ug/l)	0.2 – 1.1	<0.5	<2	<2	50 ^b	10,000
Manganese (ug/l)	.15 – 1.5	120 – 769	<0.5 - 29	0.86 - 21	50 ^c	10,000
Mercury (ug/l)	<1	<0.2	<0.2	<0.2	2 ^b	-
Nickel (ug/l)	1.8 – 3.4	4 – 10	<2- 10	<2 - 10	100 ^b	2000
Selenium (ug/l)	2.5 – 3.8	0.4 – 2	<2	<2	50 ^b	20
Silver (ug/l)	<5	<0.5	<0.5	<0.5	100 ^b	-
Zinc (ug/l)	3 – 8	3 - 13	<50	10 - 32	500 ^c	10,000

^a For common inorganic water quality constituents

^b Maximum Contaminant Level as specified in Table 64431-A of Section 64431, Title 22 of the California Code of Regulations

^c Secondary Maximum Contaminant Level as specified in Table 64449-B of Section 64449, Title 22 of the California Code of Regulations

^d Typical range = approximate 95% Confidence Interval estimate of the true population median

^e Upper limit of secondary drinking water standard

^f Taken from the Water Quality Control Plan for the San Francisco Bay Basin, 1995 Regional Water Quality Control Boards

Chapter 3

GROUNDWATER SUPPLY MANAGEMENT

This chapter covers the District programs that relate to groundwater supply management. It describes the District's groundwater recharge, treated groundwater recharge/reinjection, and water use efficiency programs. It also summarizes the role of the groundwater basin in terms of the District's overall water supply plan, the Integrated Water Resources Plan (IWRP). Groundwater supply management programs support the District's groundwater management goal by sustaining the basin's groundwater supplies, mitigating groundwater overdraft, minimizing land subsidence, protecting recharge and pumping capabilities, and sustaining storage reserves for use during dry periods.

Future efforts in groundwater supply management will include strengthening the District's groundwater recharge program so that the District makes the most effective use of its resources with regard to the amount, location, and timing of groundwater recharge.

GROUNDWATER RECHARGE

Program Objective

The objective of the Groundwater Recharge Program is to sustain groundwater supplies through the effective operation and maintenance of District recharge facilities.

Background

Groundwater recharge is categorized as either natural recharge or facility recharge. The District defines "natural" groundwater recharge to be any type of recharge not controlled by the District. Sources may include rainfall, net leakage from pipelines, seepage from surrounding hills, seepage into and out of the groundwater basin, and net irrigation return flows to the basin. Facility recharge consists of controlled and uncontrolled recharge through District facilities, which include about 90 miles of stream channel and 71 off-stream recharge ponds. Controlled recharge refers to the active and intentional recharge of the basin by releases from reservoirs or the distribution system. Uncontrolled recharge occurs through District facilities, such as creeks, but refers to recharge that would occur without any action on the part of the District. This includes natural recharge through streams as a result of rainfall and runoff. This section focuses exclusively on controlled and uncontrolled facility recharge.

Current Status

The District's current recharge program is accomplished by releasing locally conserved water and imported water to District in-stream and off-stream recharge facilities.

In-stream Recharge

The controlled in-stream recharge accounts for approximately 45 percent of groundwater recharge through District facilities. In-stream recharge occurs along stream channels in the alluvial plain, upstream of the confined zone that eventually reaches the drinking water aquifer. The District can release flow for

recharge into 80 of the 90 miles of streams. Uncontrolled in-stream recharge accounts for approximately 20 percent of groundwater recharge.

Spreader dams have been a key component of the in-stream recharge program. These temporary or permanent dams are constructed within streambeds to impound water in the channels and increase recharge rates via percolation through stream banks. The use of spreader dams increases in-stream recharge capacity by about 15,000 af, or approximately ten percent. Spreader dams have been constructed at 60 or more sites since they were first employed in the 1920s.

Off-stream Recharge

The off-stream recharge accounts for approximately 35 percent of groundwater recharge through District facilities. The off-stream facilities include abandoned gravel pits and areas excavated specifically as recharge ponds. Ponds range in size from less than 1 acre to more than 20 acres. The District operates 71 off-stream ponds in 18 major recharge systems with a cumulative area of about 393 acres. Locally conserved and imported water is delivered to these ponds by the raw water distribution system.

Off-stream recharge facilities are generally operated in one of two modes: constant head mode or wet/dry cycle mode. The District most often uses the constant head mode, which involves filling the pond and maintaining inflow at a rate equal to the recharge rate of the pond. This operation is continued until the recharge rate of the pond has decreased to an unacceptable rate. In order to maintain high recharge rates, ponds are cleaned periodically. Pond cleaning is generally considered when the recharge rate has decreased by about 75 percent. The pond is then emptied and any sediment cleaned out. In some cases, the pond is emptied and allowed to dry out and the recharge operation is restarted without cleaning. However, this typically results in a slightly reduced recharge rate. The recharge rates of the District's ponds generally range from 1 af/acre/day to about 2 af/acre/day, although some ponds have rates up to 5 af/acre/day.

In the constant head mode, algae and weed growth generally occurs. The algae growth varies according to sunlight, water temperature, nutrients and other factors. As the algae dies, it falls to the pond bottom, also contributing to a reduced recharge rate. The algae are generally controlled using chemical additives. Using deeper ponds can also reduce algae growth, as ponds in the range of 13 to 15 feet deep do not support algae growth as rapidly as shallower ponds.

Water Quality

High turbidity of incoming water results in a rapid decrease of recharge rates. In order to increase recharge pond efficiency, the District works to reduce turbidity levels with coagulants, simple mixing procedures, settling basins and skimming weirs. At most facilities, water with turbidity levels up to about 100 Nephelometric Turbidity Unit (NTU) can be treated effectively. Water with turbidity levels of less than 10 NTU is usually not treated. Each NTU represents

several pounds of fine-grained material per acre-foot of water. Allowable influent turbidity levels may depend on the availability of water.

Monitoring

Recharge facilities are monitored around the clock by operations center personnel using a computerized control system, and in the field by technicians. The raw water control system provides for remote operation of water distribution facilities and real-time system performance data. Operations technicians perform daily inspection of recharge facilities and record flows and water levels.

A periodic water balance is performed to reconcile all measured imported water, inflows, releases and changes in surface water storage. The results of this balance become the final accounting for distribution and facility processing. The data is used for water rights reporting, accounting for usage of federal water, for facility performance measurement purposes, and for the groundwater basin water budget.

Future Direction

Although spreader dams have traditionally been a key component of the in-stream recharge program, their use has been limited significantly because of more stringent permitting due to fish and wildlife concerns.

The District has completed the feasibility testing of a direct injection facility to increase recharge and has completed construction of a full-scale well. The injection well has a capacity of 750 af/year and will be supplied with water treated at the Rinconada WTP. The potential for additional direct injection facilities may be evaluated in the future.

TREATED GROUNDWATER RECHARGE/REINJECTION PROGRAM

Program Objective

The objective of the Treated Groundwater Recharge/Reinjection Program is to encourage the reuse or recharge of treated groundwater from contamination cleanup sites in order to enhance cleanup activities and protect the County's groundwater resources.

Background

District Resolution 94-84 encourages the reuse or recharge of treated groundwater from groundwater contamination cleanup projects and provides a financial incentive program to qualifying cleanup project sponsors. Sponsors must document that all non-potable demands are satisfied to the maximum extent possible prior to injecting any water into the aquifer. All injected water must be recovered by the pump-and-treat cleanup activities at the site.

Each application is processed within 45 working days. Once an applicant has met the qualifying conditions and is accepted, a legal contract is prepared and signed by the District and the clean-up project sponsor. This contract details how the sponsor will

receive a financial incentive from the District. The sponsor is responsible for providing periodic updates on the amount and quality of water reinjected/recharged.

Current Status

The amount of this financial incentive is equivalent to the basic groundwater user rate. IBM (San Jose) is currently recharging between 900 and 1,000 af per year, and is the only approved sponsor currently injecting/recharging groundwater and receiving this financial incentive.

Future Direction

Any future applications will be evaluated rigorously with respect to overall groundwater basin management to ensure that the groundwater basin will not be adversely impacted.

WATER USE EFFICIENCY PROGRAMS

The District's Water Use Efficiency Programs are designed to promote more effective use of the County's water supplies. The District's demand management measures are described in the Water Conservation and Agricultural Water Efficiency sections that follow the discussion of Recycled Water. The District's commitment to increasing the use of recycled water within the County will also help the District to more effectively use the County's water.

Recycled Water

Program Objective

The objective of the Recycled Water Program is to increase the use of recycled water, thereby promoting more effective use of the County's water supplies. To meet this objective, the District is forming partnerships with the four sewage treatment plant operators in the County and is taking every opportunity to expand the distribution and use of tertiary treated recycled water for non-potable uses. Present efforts focus on planning for future uses in agriculture, industry, commercial irrigation, and indirect potable reuse. To meet the objective of increasing the use of recycled water, the District is:

- Partnering with and providing rebates to the South Bay Water Recycling Program (SBWRP) which includes the cities of San Jose, Santa Clara and Milpitas.
- Operating and expanding the South County Recycled Water System as the recycled water wholesaler in the area. Formal agreements with the recycled water producer, the South County Regional Wastewater Authority (SCRWA), and the recycled water retailer, the City of Gilroy, are in place.
- Providing the City of Sunnyvale a rebate on the recycled water delivered each year.
- Meeting with the City of Palo Alto and their stakeholder group to help plan for expanded future use of recycled water in the North County.

- Contracting a consultant to perform a feasibility study on Advanced Treated Recycled Water.

Background

The District has been involved in water recycling since the 1970s when it supported research in Palo Alto and partnered in the establishment of the South County distribution system in Gilroy. Since the early 1990s, the District has become involved in an ever-increasing role. Recycled water use in the County has grown from about 1,000 af in 1990 to over 6,000 af in the year 2000. To encourage the use of recycled water, in 1993 the District started providing rebates to agencies delivering recycled water.

The largest system for recycled water distribution is the South Bay Water Recycling Program, which has over 60 miles of distribution pipelines and serves over 300 customers. The District continues a partnership with the SBWRP in its planning effort for expansion. In 1999, the District formalized its partnership with the South County Regional Wastewater Authority and the cities of Gilroy and Morgan Hill to plan and operate the recycled water distribution system in South County. Since then, the District has begun construction on major pumping and reservoir facilities to modernize the system.

Current Status

The District is expanding its planning efforts and is continuing discussions with the SBWRP for expanding the use of recycled water. This will involve transporting recycled water south from the existing pipeline in south San Jose in order to supply agricultural and industrial customers that now use groundwater or untreated surface water. The City of San Jose, who administers the SBWRP, has installed several groundwater monitoring wells at the District's request in order to monitor potential changes in groundwater quality as a result of the application of recycled water for irrigation.

The District continues to modernize and expand the South County Recycled Water System. Besides serving golf courses and parks, expansion of this system will involve delivering water to industrial and agricultural users. District staff has inventoried the volume of use and location of the largest groundwater and surface water users in the area and is beginning a marketing study for expansion of the system. The District is also working with the City of Gilroy to plan for the connection of new large water use developments to the system.

A project has been initiated to study the feasibility of installing a pilot plant for the advanced treatment of recycled water for use in agriculture, commercial irrigation, industry, and possibly for future streamflow augmentation and groundwater replenishment.

Future Direction

The future direction of the recycled water program is driven by District Board policy, which directs staff to increase recycled water use to 5% of total water use in the County by the year 2010 and to 10% of total use by the year 2020. To meet this goal, it is assumed that a countywide network of recycled water distribution systems will be

developed. The initial stage will provide for a major transmission main from the area of south San Jose in the SBWRP service area to the major commercial and agricultural customers in South County. Developing advanced treatment methods and facilities to provide recycled water of a higher quality standard than the present tertiary treatment will be required in order to meet the needs of some potential customers. Methods and facilities to blend recycled water with untreated surface water and with groundwater will also need to be developed in order to provide for peaking factors and the quality requirements of some customers. Additional research on the most effective method of advanced treatment and ways to develop more industrial use and onsite treatment of recycled water will be performed.

District efforts to expand recycled water use within Santa Clara County will be coordinated with the District's Integrated Water Resources Plan which will evaluate the various options for obtaining the additional water the County will require in future years. This effort will evaluate the comparative costs and benefits of recycled water, water conservation, water banking, and water transfers. District staff will work with partnering agencies to ensure that any potential uses of recycled water will not adversely impact the groundwater basin or recharge and extraction capabilities.

Water Conservation Programs

Program Objective

The objective of the Water Conservation Program is to promote more efficient use of the County's water resources and to reduce the demands placed on the District's water supplies. To meet this objective, the District has implemented a variety of programs designed to increase water use efficiency in the residential, commercial, industrial, and agricultural sectors, which all rely, in part, on extraction from the groundwater basin.

Background

The District's Water Conservation Program has been developed in large part to comply with the Best Management Practices (BMPs) commitments, defined in the 1991 Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California. The program targets residential, commercial/industrial/institutional, and agricultural water use.

The District has promoted conservation of the County's water supplies since its creation. However, a series of drought years between 1987 and 1992 prompted the District and local water retailers to significantly increase conservation efforts. The District enjoys a special cooperative partnership with the water retailers in regional implementation of the BMPs; several program elements were developed in partnership with the local water retailers. Water retailers have partnered with the District in marketing efforts for cooperative programs and in the distribution of water-saving devices such as showerheads and aerators.

Current Status

The Water Conservation Program has designed programs aimed specifically at residential, commercial, and agricultural users. Residential programs include:

- Water-Wise House Call Program designed to measure residential water use and provide recommendations for improved efficiency.
- Showerhead/Aerator Retrofit Distribution Program, which provides free showerheads and aerators to replace less efficient devices.
- Clothes Washer Rebate Program for the installation of high-efficiency washing machines.
- Landscape workshops focused on water efficient landscape and irrigation design.
- Ultra-Low-Flush Toilet (ULFT) Program (free or low-cost).
- Multi-Family Submeter Pilot Program aimed at reducing water use in multi-family dwellings.
- Education programs in English and Spanish, including the distribution of literature, promotion of water conservation at organized events, and the survey program.

District programs targeting water conservation in the commercial sector include:

- Irrigation Technical Assistance Program (ITAP) designed to help large landscape managers improve irrigation efficiency through free site evaluations.
- Commercial Clothes Washer Rebate Program, in conjunction with PG&E, San Jose/Santa Clara Water Pollution Control Plant, and the City of Santa Clara.
- Project WET (Water Efficient Technologies), which offers rebates to commercial and industrial customers for the reduction of water use and wastewater discharges (in conjunction with the City of San Jose).
- Ultra-Low-Flush Toilet Retrofit Program in conjunction with the San Jose/Santa Clara Water Pollution Control Plant.
- Irrigation Submeter Program to encourage better water management at large commercial sites.

The District has also implemented several programs to promote water use efficiency in the agricultural sector, which relies mainly on the groundwater basin for its water needs. These programs are discussed in the following section of this report.

In fiscal year 1999/2000, the District's water conservation programs achieved an estimated water savings of over 24,000 af, which includes 10,000 af through water retailer participation.

Future Direction

Water conservation efforts are anticipated to reduce County water demands by approximately 30,000 af in 2001, and by almost 32,000 af in 2002. Future programs and projects being developed include:

- Water Use Efficiency Baseline Survey to provide specific information needed to tailor the District's water use efficiency program to result in effective long-term water use efficiency, to evaluate the impacts of water efficiency measures, and further promote and implement Best Management Practices (BMPs).
- Expansion of the Water Efficient Technologies (WET) Program to the entire county.
- Landscape and Agricultural Area Measurement and Water Use Budgets.

Agricultural Water Efficiency

Program Objective

The objective of the Agricultural Water Efficiency Program is to promote, demonstrate and achieve water use efficiency in the agricultural sector, which relies on groundwater supplies for most of its water needs. To meet this objective the District has implemented the following program elements:

- Mobile Lab Program
- California Irrigation Management Information System (CIMIS) Program
- Outreach Program

Background

As required by the Central Valley Project Improvement Act, in 1994 the District adopted a Water Conservation Plan to comply with U.S. Bureau of Reclamation criteria. This plan commits the District to support various agricultural water management activities and to implement the urban BMPs discussed in the Water Conservation Programs section.

Among the agricultural water management activities outlined in the plan is a Mobile Irrigation Lab program. This program provides local farmers with on-site irrigation system evaluations and recommendations for efficiency improvement. The mobile lab is designed to help increase water distribution uniformity and on-farm irrigation and energy efficiencies for all types of irrigation systems. Proper distribution uniformity can result in lower water and energy bills and decreased fertilizer application. Managing nitrogen and irrigation input to more closely match actual crop needs can also reduce water and

energy bills; this approach reduces the potential for nitrate to leach into groundwater while maintaining or improving agricultural productivity.

California Irrigation Management Information System (CIMIS) is a related program that helps large-scale water users to develop water budgets for determining when to irrigate and how much water to apply. Created in 1982 through a joint effort of UC Davis and the Department of Water Resources (DWR), CIMIS is a network of more than 100 computerized weather stations across the state that collects, measures and analyzes all the climatological factors that influence irrigation. This information provides major irrigators daily data on the amount of water that evaporates from the soil and the amount used by grasses.

The District owns and supervises two CIMIS weather stations, one at the UC field station in downtown San Jose, and the other at Live Oak High School in Morgan Hill. Both of these stations, as well as others around the state, are connected to a central computer run by the DWR in Sacramento. The updated information from the District's two stations is automatically downloaded and then provided to the public via a telephone hotline recording or the Internet.

An Outreach Program is an essential component of the agricultural efficiency programs. Outreach to the agricultural community includes public information dissemination, seminars or workshops, public presentations, newsletter articles and specific program materials.

Current Status

The District continues to implement the Mobile Lab Program, which provides on-farm irrigation evaluations, pump efficiency tests, nitrate field test demonstrations, and recommendations for efficient irrigation improvements. Approximately 30 sites participate in the program each year.

The District is currently assessing the potential need for an additional CIMIS station in the North County.

As part of the Outreach Program, significant work has been channeled into developing educational materials on the use of CIMIS in efficient irrigation scheduling. Presentations on the various program elements have been made to the District's Agriculture Advisory Committee, Farm Bureau and grower associations. Articles and brochures have been developed for CIMIS and the mobile lab program. In addition, the staff from the District's Water Use Efficiency and Groundwater Management Units have worked together to hold various workshops and seminars in the South County on irrigation and nutrient and pesticide management. All seminars have been well attended.

Future Direction

The future direction of the agricultural water efficiency programs includes the continuation and further development of the Mobile Lab Program. District staff will recommend continuation of the program as long as it demonstrates its cost-effectiveness.

The District is currently evaluating the feasibility of implementing a financial incentives program to complement the mobile lab.

A Monitoring and Evaluation Program is necessary to determine and assess the effectiveness of the various programs. The focus of the current monitoring effort has been the tracking of activity levels and program costs. To ensure that future water saving goals are achieved and urban and agricultural programs are successful, the District will need to enhance its existing monitoring program to more rigorously quantify actual water savings.

INTEGRATED WATER RESOURCES PLAN

Program Objective

The objective of the Integrated Water Resources Plan (IWRP) is to develop a long-term, flexible, comprehensive water supply plan for the County through year 2040 that incorporates community input and can respond to changing water supply and demand conditions.

Background

The District's 1975 water supply master plan identified the Federal San Felipe Project as the best solution to meet future water demands. However, recent severe droughts, changing state and federal environmental and water quality regulations, and the variability and reliability of both local and imported supplies underscored the need for an updated, more flexible water supply planning process. In the early 1990s, District staff developed a water supply overview study and began to outline a process to update the 1975 master plan.

The overview study described the District's water system and identified drinking water quality issues, the County's water needs, existing water supplies, projected water supplies, potential water shortages, and other components for managing water supplies. The overview study also evaluated water supply alternatives and recommended a stakeholder process to help the District select the preferred alternative.

As a result of the recommendations from the water supply overview process and several workshops involving the Board and overview study project team, the District Board of Directors authorized staff to undertake the IWRP.

In March of 1996, the project team introduced the Board's planning objectives for the IWRP evaluation of water supply strategies. These objectives were refined by stakeholders, including: the general public, representatives of business, community, environmental and agricultural groups, District technical staff, and officials of local municipalities and other water agencies. Stakeholders used these objectives to evaluate various water supply strategies and agree upon an IWRP Preferred Strategy.

The IWRP Preferred Strategy aims to maximize the District's flexibility to meet actual water demands, whether they exceed or fall short of projections. It relies on water

banking, recycled water, demand management, and water transfers, plus “core elements” designed to ensure the validity of baseline planning assumptions, monitor or evaluate resource options, and help meet planning objectives. The Board approved the preferred strategy in December of 1996.

The groundwater basin is a critical component in the management of the County’s water supply. The basin treats, transmits, and stores water for the County. The management objective of the 1996 IWRP is to maintain the highest storage possible in the three interconnected subbasins (or to bank groundwater) without creating high groundwater problems. During dry periods when local and imported water supplies do not meet the County’s water needs, stored groundwater is used to make up the difference. However, the use of this storage has to be balanced with the potential occurrence of land subsidence.

Land subsidence has been a great concern in the valley. As much as thirteen feet of subsidence occurred in parts of the basin before subsidence was minimized through recharge activities and imported water deliveries. If subsidence were to recommence, the damage to infrastructure would be significant, as many levees, pipelines, and wells would need to be rebuilt. Therefore, the IWRP must balance the use of the groundwater basin with the avoidance of adverse impacts.

Current Status

The preferred strategy from the 1996 IWRP is being implemented. Action on several elements of the plan that has already taken place includes the following:

Water Banking

The District reached an agreement with Semitropic Storage District to bank up to 350,000 af in their storage facilities. The District currently has stored about 140,000 af in the water banking program.

Recycled Water

The District is working closely with the city of San Jose and Sunnyvale to develop and market recycled water in lieu of groundwater pumping for irrigation. Planning with South County Regional Wastewater Agency is also occurring (see section on Water Use Efficiency).

Demand Management

The Water Use Efficiency Unit has developed an aggressive program to minimize water use and provide assistance to irrigators to improve the efficiencies in their irrigation systems (see section on Water Use Efficiency).

Water Transfers

In 1999, the District entered into a multi-party water transfer agreement for an agricultural supply from a Central Valley Project (CVP) contractor. This transfer will make a small amount of dry year water available to the District during the next 20 years.

Core Elements

- In 1997, the District entered into a Reallocation Agreement that provides a reliability “floor” of 75 percent of contract quantity for the District’s Municipal and Industrial CVP supply, except for extreme years when CVP allocations are made on the basis of public health and safety.
- A study was recently conducted to determine the frequency of critical dry periods using a statistical approach that showed the preferred strategies are very robust although not perfect.
- The Operational Storage Capacity of the Santa Clara Valley Subbasin was evaluated and refined in 1999 (SCVWD, 1999) – see section on operational storage capacity.

Future Direction

An ongoing process of monitoring the baseline conditions and contingency action levels is being developed. Updates to the IWRP are scheduled for every 3 to 5 years. The District is currently developing the 2002 IWRP Update.

As the District’s water supply planning document through year 2040, the IWRP has identified the operation of the groundwater basin as a critical component to help the District respond to changing water supply and demand conditions. Planning and analysis efforts for future updates of the Groundwater Management Plan and the IWRP need to be integrated in order to provide a coordinated and comprehensive water supply plan for Santa Clara County.

Additional Groundwater Supply Management Activities

Groundwater Modeling

The District uses a three-dimensional groundwater flow model to estimate the short-and long-term yield of the Santa Clara Valley Subbasin and to evaluate groundwater management alternatives. Six layers are used to represent the subbasin, and changes in rainfall, recharge, and pumping are simulated. The model is used to simulate and predict groundwater levels under various scenarios, such as drought conditions, reduced imported water availability, or increased demand. The groundwater model also allows the District to evaluate the operational storage capacity (discussed below) in the Santa Clara Valley Subbasin.

In the future, a three-dimensional flow model similar to the one used in the Santa Clara Valley Subbasin will be developed for the Coyote and Llagas Subbasins, enabling the District to simulate groundwater conditions throughout the County.

Operational Storage Capacity Analysis

The operational storage capacity is an estimate of the storage capacity of the groundwater basin as a result of District operation. Operational storage capacity is generally less than the total storage capacity of the basin, as it accounts for operational constraints such as

available pumping capacity and the avoidance of land subsidence or high groundwater levels. Identifying a reasonable range for the amount of groundwater that can be safely stored in wet years and withdrawn in drier years is critical to proper management of the groundwater basin.

The operational storage capacity of the Santa Clara Valley Subbasin was evaluated (SCVWD, 1999) using the groundwater flow model and historical hydrology, which included two periods of severe drought. The key findings of the analysis were that:

- The operational storage capacity of the Santa Clara Valley Subbasin is estimated to be 350,000 af.
- The rate of withdrawal from the basin is a controlling function and pumping should not exceed 200,000 af in any one year.
- The western portion of the subbasin is operationally sensitive which requires the Rinconada Water Treatment Plant to receive the highest priority when supplies become limited.

In 2001, an analysis of the operational storage capacity for the Coyote and Llagas Subbasins was conducted (SCVWD, 2001). As the District does not currently have a groundwater model for these two subbasins, a static analysis was used. Unlike a groundwater model, a static analysis cannot simulate changes in recharge, pumping, or demand. Instead, the operational storage capacity was estimated as the volume between high and low groundwater surfaces, chosen to maximize storage while accounting for operational constraints such as high groundwater conditions. The draft estimate for the combined operational storage capacity of the Coyote and Llagas Subbasins ranges from 175,000 to 198,000 af. The District is working to narrow the range of estimates for operational storage capacity through further analysis.

Having an estimate of the amount of water that can be stored within the basin during wet years and withdrawn during drier times will continue to be critical in terms of long-term water supply planning. As hydrology, water demands, recharge, and pumping patterns change, the estimate of operational storage capacity will need to be updated.

Subsidence Modeling

Due to substantial land subsidence that has occurred within the Santa Clara Valley Subbasin, the District uses numerical modeling to simulate current conditions and predict future subsidence under various groundwater conditions. PRESS (Predictions Relating Effective Stress and Subsidence) is a two-dimensional model that relates the stress associated with groundwater extraction to the resulting strain in fine-grained materials such as clays. The District has calibrated the model at ten index wells within the subbasin, and has established subsidence thresholds equal to the current acceptable rate of 0.01 feet per year.

Chapter 4

GROUNDWATER MONITORING PROGRAMS

This chapter describes District programs that monitor the water quality, water levels and extraction from the groundwater basin. It also describes the District's land subsidence monitoring program. These programs provide data to assist the District in evaluating and managing the groundwater basin. Specifically, the groundwater and subsidence monitoring programs provide the data necessary for evaluating whether the program outcomes result in achievement of the groundwater management goal.

Future efforts in groundwater monitoring will include the annual development of a groundwater conditions report, which will contain information regarding groundwater quality, groundwater elevation, and land subsidence.

GROUNDWATER QUALITY MONITORING

Program Objective

The objective of the General Groundwater Quality Monitoring Program is to determine the water quality conditions of the County's groundwater resources. By monitoring the quality of the groundwater basin, the District can discover adverse water quality trends before conditions become severe and intractable, so that timely remedial action to prevent or correct costly damage can be implemented. In general, the District monitors groundwater quality to ensure that it meets water quality objectives for all designated beneficial uses, including municipal and domestic, agricultural, industrial service, and industrial process water supply uses.

Background

Groundwater quality samples have been collected in the County since the 1940s by the District and by others. In 1980, District staff reviewed the existing general groundwater quality monitoring program and recommended changes and enhancements. The recommended changes and enhancements included revising the monitoring well network, revising the list of water quality parameters to be measured, and collecting groundwater samples biennially (every other year). Groundwater samples were analyzed for general mineral and physical water quality parameters.

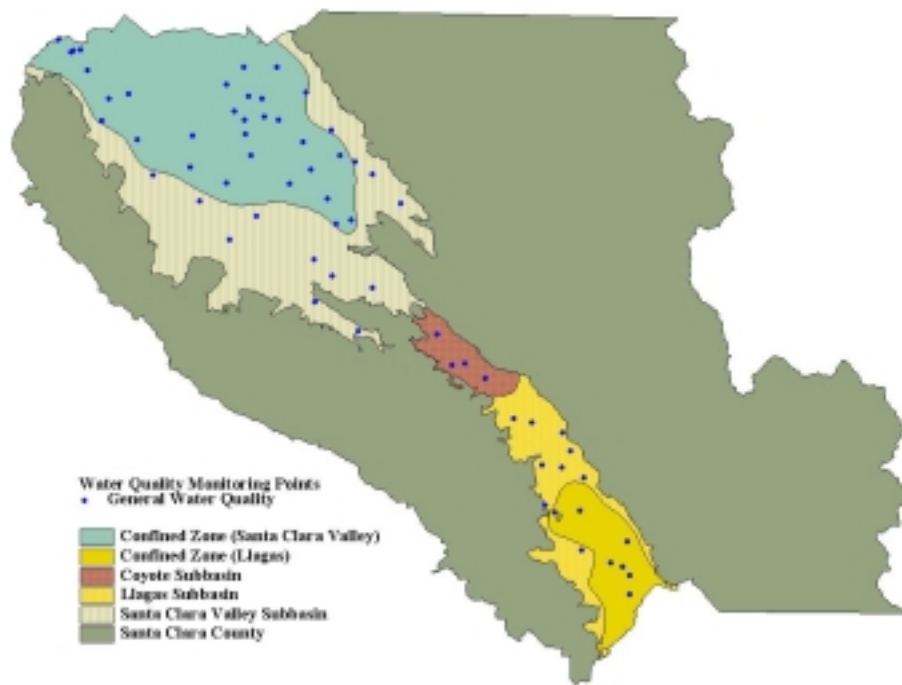
Current Status

The general groundwater quality monitoring program is designed to provide specific water quality data for each of the three subbasins (Figure 2-3). The monitoring well network includes one or more wells in each hydrographic unit yielding significant amounts of water. Groundwater samples collected from the monitoring network are intended to reflect the general areal and vertical groundwater quality conditions. Currently, the following program activities occur biennially:

- Water quality samples are collected from a monitoring network of approximately 60 wells (Figure 4-1).

- Samples are analyzed for general minerals, trace metals, and physical characteristics.
- Analytical results are evaluated, the database is updated, and routine water quality computations are performed.
- A summary report describing the water quality of the groundwater resources in the County is prepared.

**Figure 4-1
Water Quality Monitoring Wells**



In addition to the 60 wells monitored by the District for general groundwater quality analysis, the District monitors additional wells for special studies. There are currently approximately 100 wells monitored for MTBE, 60 wells monitored for nitrate, and 30 wells monitored for saltwater intrusion. The District also receives groundwater quality data for approximately 300 water retailer wells from the California Department of Health Services.

Monitoring results suggest that water quality is excellent to good for all major zones of the groundwater basin. This is based on comparing groundwater quality monitoring results to water quality objectives. Regional Water Quality Control Boards designed water quality objectives based on beneficial uses. Water quality objectives for municipal and domestic, industrial service, and industrial process water supply beneficial uses are equivalent to the drinking water standards established by the California Department of

Health Services. Water quality objectives for agricultural beneficial uses are defined specifically in the Regional Water Quality Control Boards' Water Quality Control Plans. Drinking water standards, agricultural water quality objectives, and monitoring results for common groundwater constituents are summarized in Table 2-2.

The more common trace constituents, which are considered unwanted impurities when present in high concentrations, are generally not observed in concentrations that adversely affect beneficial uses. Areas with somewhat degraded waters in terms of total mineral salt content have been identified in the Santa Clara Valley Subbasin and elevated nitrate concentrations have been observed in the Coyote and Llagas Subbasins. In addition, volatile organic compounds and other anthropogenic compounds have affected shallow aquifers in localized areas. Special groundwater monitoring programs have been developed to define the extent and severity of these problems and are discussed in Chapter 5.

Radon analysis was performed as a one-time special survey of current conditions and provided data for analyzing the potential impacts of upcoming drinking water standards for radon. The results of the 1999 sampling are presented in the 2000 General Groundwater Quality Monitoring report.

Future Direction

The General Groundwater Quality Monitoring Program utilizes relatively few, widely spaced monitoring points to assess large areas. Certain hydrographic units of the basin are only sparsely monitored at present. Staff is continuing to review the monitoring network to ensure that groundwater samples collected from the monitoring well network reflect areal and vertical groundwater quality conditions within each hydrographic unit. If it is determined that additional monitoring points are needed in some areas where there are no existing wells, District staff will recommend the installation of additional monitoring wells.

The District is also planning to increase the frequency of monitoring and the number of water quality parameters that are measured. Historically, the most frequent sampling frequency has been biennially. However, in order to parallel District efforts to better monitor performance in achieving desired results, the sampling frequency for the General Groundwater Quality Monitoring Program will be increased to annually. The number of water quality parameters that are measured will also be increased, so that samples are analyzed for volatile organic compounds, a significant concern in Santa Clara County. Samples will continue to be analyzed for general minerals, trace constituents, and physical characteristics.

The District will continue to assess and provide recommendations to address any adverse water quality trends that are observed through the General Groundwater Quality Monitoring Program. In addition, the District will continue to conduct special studies for specific contaminants as the need arises. As part of groundwater management planning, action levels and triggers will be developed for the constituents monitored.

The District will also begin developing annual groundwater conditions reports, which will summarize information regarding groundwater quality, groundwater elevation, and land subsidence.

GROUNDWATER ELEVATION MONITORING

Program Objective

The objective of the Groundwater Elevation Monitoring Program is to provide accurate and dependable depth-to-water field measurements for the County's major groundwater subbasins. By monitoring the groundwater elevations, the District can evaluate the groundwater supply conditions and formulate strategies to ensure adequate water supplies, prioritize recharge activities, and minimize any adverse impacts.

Background

Collecting depth-to-water information has been one of the District's functions since it was first formed as a water conservation district in 1929. Depth-to-water information is used to create groundwater elevation contour maps, which depict the conditions of the groundwater basin in the fall and spring of each year. Depth-to-water data are also used for subsidence modeling, to generate hydrographs needed to analyze groundwater model simulations, and to provide information to District customers on current and historical groundwater elevations.

Current Status

The District continues to collect depth-to-water field measurements, obtain depth-to-water measurements from other agencies and record that information for approximately 275 wells. Most wells in the current program are privately owned and their locations are fairly evenly distributed among the three subbasins (Figure 4-2). Current groundwater elevation monitoring includes the following:

- Collection of monthly depth-to-water field measurements from approximately 168 wells, including approximately 150 wells owned by other agencies (Figure 4-2).
- Collection of quarterly depth-to-water field measurements from approximately 108 wells (Figure 4-2).
- Maintenance of a groundwater elevation database.
- Preparation of semi-annual groundwater level elevation contour maps.

The information in the District depth-to-water database is used regularly by District staff. Each year the District answers several hundred requests for depth-to-water information from other public agencies, consultants, and the public.

Future Direction

Although the District collects depth-to-water data from many wells throughout the County, most wells were designed as production wells, with perforations at multiple

intervals to increase groundwater extraction. There are relatively few wells that measure groundwater elevations in a single depth zone. The existing Groundwater Elevation Monitoring Program is currently being updated to target monitoring wells where discrete, depth-specific groundwater elevations can be obtained, which will enable better characterization of the three-dimensional groundwater system. A new groundwater elevation monitoring network has already been designed for the Santa Clara Valley Subbasin, and another project will be undertaken to develop a monitoring network for the Coyote and Llagas Subbasins by 2003.

Figure 4-2
Groundwater Elevation Monitoring Wells



The proposed network for the Santa Clara Valley Subbasin will include monitoring the individual piezometric pressures at the following 79 wells, which are geographically distributed among the hydrographic units in the subbasin. Specific recommendations include the:

- Continued monitoring of 31 depth-specific wells monitored in the existing depth-to-water program.
- Acquisition of 16 aquifer-specific wells from other organizations.
- Addition of 25 wells that are not part of the existing depth-to-water program.
- Installation of 7 new multiple-well monitoring sites to be constructed by 2003.

Monitoring these 79 wells will provide invaluable information to aid in characterizing depth-specific groundwater conditions. However, in addition to these 79 wells, monitoring of the wells in the current groundwater elevation network will continue indefinitely, as the water level data can be useful even though it cannot be attributed to specific depth zones. Monitoring is recommended on a quarterly basis during the months of January, April, July, and October, although some wells will be monitored monthly. A quarterly monitoring frequency is consistent with the historical groundwater level data in the basin, and is currently adequate in terms of current groundwater elevation monitoring needs. A change in monitoring frequency will be assessed if necessary.

The proposed monitoring network for the Santa Clara Valley Subbasin will be re-evaluated in 2003 to ensure that monitoring needs can be met with the wells proposed. A monitoring network for the Coyote and Llagas Subbasins will be developed by 2003.

Since groundwater information is continually utilized both within and outside the District, an online database that is easily accessible through the District's web site is being evaluated as it would significantly reduce District staff time spent in database maintenance and fulfilling depth- to-water data requests.

GROUNDWATER EXTRACTION MONITORING

Program Objective

The amount of groundwater extracted from the groundwater basin is recorded through the Water Revenue Program. Data produced by this program are used primarily to: 1) determine the amount of water used by each water-producing facility and collect the revenue for this usage, and 2) fulfill the provisions of Section 26.5 of the District Act which requires the District to annually investigate and report on groundwater conditions.

Background

The Water Revenue Program tracks groundwater, surface water, treated water and recycled water production within the District. The first collection of groundwater extraction data began shortly after the State Legislature authorized amendments to the Santa Clara County Flood Control and Water District Act in June 1965. As part of implementation of the District Act, wells within the District were registered. The District has been collecting groundwater extraction data from wells in the Santa Clara Valley Subbasin (also known as the North Zone or Zone W-2) since the early 1960s. After the merger with Gavilan Water Conservation District in 1987, this program expanded to the Coyote and Llagas Subbasins (the South Zone, or Zone W-5).

Current Status

To determine the amount of all water produced in the District, including groundwater, the Water Revenue Program:

- Develops and distributes water extraction statements to well owners within the two water extraction zones on a monthly, semi-annual, and annual basis.

- Audits incoming water extraction statements and completes field surveillance to ensure that water extraction information is accurate.
- Audits and invoices surface, treated and recycled water accounts.
- Assists the public in completing and filing water extraction statements.
- Maintains files for surface, ground, treated and recycled water accounts.
- Administers and maintains a database containing all water extraction information.
- Initiates and approves the installation of water measurement devices (meters) on water-producing wells.
- Registers (assigns state well numbers) and maps all water extraction wells.

Water extraction data is stored in an electronic database (Water Revenue Information System) and on paper. Program staff maintain accounts and records for more than 6,000 water extraction wells and approximately 27,000 monitoring wells. Staff provide information on these accounts to other District programs and outside customers, and provide other customer support as necessary.

Although approximately half of the wells within the County are not metered, metered wells extract the vast majority of groundwater used within the County. Where meters are not feasible, crop factors are used to determine agricultural water usage and average values adjusted for residences. Water meter testing and maintenance are performed on a regular basis. Maintenance is done to ensure meters are performing properly and accurately. When problems are discovered, meters are repaired or replaced. Meters are also replaced on a regular basis for testing and rebuilding.

The following table shows type of usage for wells in Zone W-2 (Santa Clara Valley Subbasin) and Zone W-5 (Coyote and Llagas Subbasins) and the number of meters recording usage.

Table 4-1
1998 Statistics on Extraction Wells

	North Zone (W-2)	South Zone (W-5)
Agricultural Wells	81	570
Municipal & Industrial Wells	1,875	350
Domestic Wells	567	2,569
Ag & M&I Wells	77	511
Total Number of Wells	2,600	4,000
Number of Metered Wells	1,017	395
Percentage of Metered Wells	40%	10%

In accordance with Section 26.5 of the District Act, the District prepares an annual Water Utility Enterprise Report, which contains the following information: present and future water requirements of the County; available water supply; future capital improvement, maintenance and operating requirements; financing methods; and the water charges by zone for agricultural and nonagricultural water. Recommended water rates are based on multi-year projections of capital and operating costs. Water charges can be used as a groundwater supply management tool, as the surcharge for treated water can be adjusted to encourage or discourage extraction from the groundwater basin.

Future Direction

Groundwater extraction monitoring data will continue to be important as a basis of groundwater management decisions and for groundwater revenue receipts. Program staff are currently evaluating the existing database and hope to convert the database into a relational database and link it to the newly developed Geographic Information System (GIS) based well mapping system. This will enable staff to evaluate groundwater use data geographically and to provide this data to groundwater management decision-makers in a meaningful and easy to use format.

LAND SUBSIDENCE MONITORING

Program Objective

The objective of the Land Subsidence Monitoring Program is to maintain a comprehensive system to measure existing land subsidence and to predict the potential for further subsidence.

Background

Land subsidence was first noticed in 1919 after an initial level survey conducted in 1912 by the National Geodetic Survey. At that time, 0.4 feet of subsidence was measured in downtown San Jose. Between 1912 and 1932, over 3 feet of subsidence were measured at the same location. As a result of this drastic increase in subsidence, an intensive leveling network was installed for periodic re-leveling to evaluate the magnitude and geographical extent of subsidence. From 1912 to 1970, cumulative subsidence measured at the same San Jose location totaled approximately 13 feet.

A cross-valley differential leveling survey circuit was run in the 1960s and continues to be conducted. The level circuit was conducted almost annually from 1960 through 1976, once in 1983, and annually from 1988 to the present.

In 1960, the United States Geologic Survey (USGS) installed extensometers, or compaction recorders, in the two 1,000-foot boreholes drilled in the centers of recorded subsidence sites in Sunnyvale and San Jose. The purpose for installing these wells was to measure the rate and magnitude of compaction that occurs between the land surface and the bottom of the well.

In the mid-1960s, imported water from San Francisco's Hetch-Hetchy reservoir and the State Water Project's South Bay Aqueduct played a major role in restoring groundwater

levels and curbing land subsidence. A combination of factors including imported water, natural recharge, decreased pumping and increased artificial recharge has reduced land subsidence to an average 0.01 feet per year.

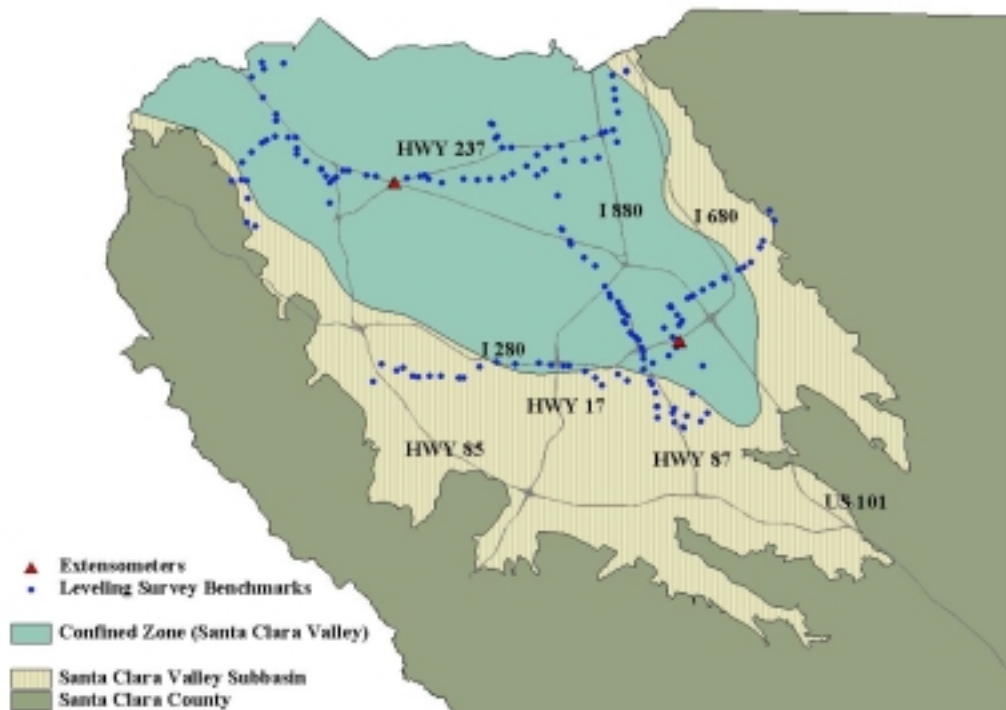
The District developed subsidence thresholds that relate the expected rate of land subsidence from various groundwater elevations. The Predictions Relating Effective Stress and Subsidence (PRESS) computer code was utilized for this model, and 10 index wells located throughout the Santa Clara Valley Subbasin were used as control points for the subsidence calibration and prediction.

Current Status

The existing land subsidence monitoring program includes the following:

- Monitoring land subsidence at two extensometer sites in San Jose and Sunnyvale (Figure 4-3).
- Conducting an annual leveling survey across three different directions in the valley to measure any land subsidence that may be occurring away from the extensometers (Figure 4-3).
- Analyzing data to evaluate the potential of re-initiating land subsidence.

Figure 4-3
Location of Extensometers and Leveling Survey Benchmarks



The extensometer in the San Jose site has recently been upgraded and equipped with monitoring and storage instrumentation to execute the data acquisition process electronically. Data collected from this site continues to be analyzed to determine any changes in the rate of land subsidence.

In 1998, the District entered into a cooperative agreement with the USGS to use Interferometric Synthetic Aperture Radar (InSAR) technology to measure any subsidence that may have not been captured in the existing monitoring program. This new technology compares satellite images taken at different times and reveals any changes in ground surface elevations with an accuracy of a few millimeters. InSAR covers the entire County, unlike traditional monitoring which is site-specific. Under the cooperative agreement, InSAR images were analyzed both seasonally and over a five-year period. Data from this study reasonably replicated and supported the data obtained from the District's extensometers.

The leveling survey continues to be conducted annually. A new leveling line was added to the leveling survey in 1998 as InSAR images indicated that additional information was needed along the Silver Creek Fault in San Jose.

Future Direction

Monitoring and data storage equipment have been installed at the San Jose extensometer site. Plans to enhance the land subsidence monitoring network program include the installation of new equipment to facilitate the monitoring and storage of data from the extensometer site in Sunnyvale, and the evaluation of datum stability at this site.

Through the 1998 study with the USGS, InSAR technology was proven able to reasonably replicate historical subsidence data from extensometers and the cross-valley leveling surveys. District staff will investigate the benefits of incorporating InSAR technology into the current land subsidence monitoring program.

The District will continue to utilize groundwater flow and subsidence models to simulate land subsidence as a result of different groundwater scenarios and groundwater management alternatives.

Chapter 5

GROUNDWATER QUALITY MANAGEMENT PROGRAMS

This chapter describes District programs that address nitrate management, saltwater intrusion, well construction and destruction, wellhead protection, leaking underground storage tanks, toxic cleanup, land use and land development review, and other groundwater protection issues. These programs help protect groundwater quality by identifying existing and potential groundwater quality problems, assessing the extent and severity of such problems, and preventing and mitigating groundwater contamination.

NITRATE MANAGEMENT

Program Objective

The objective of the Nitrate Management Program is to delineate, track and manage nitrate contamination in the groundwater basin in order to ensure the basin's viability as a long-term potable water supply. More specifically, the objectives are as follows:

- Reduce the public's exposure to high nitrate concentrations.
- Reduce further loading of nitrate.
- Monitor the occurrence of nitrate.

Background

The conversion of nitrogen to nitrate is a natural progression in the nitrogen cycle. In the form of nitrate, nitrogen is highly soluble and mobile. Due to its solubility and mobility, nitrate is one of the most widespread contaminants in groundwater. Unlike other compounds, nitrate is not filtered out by soil particles. It travels readily with rain and irrigation water into surface and groundwater supplies.

The amount of nitrate reaching the groundwater depends on the amount of water infiltrating the soil, the concentration of nitrate in the infiltrating water and soil, the soil type, the depth to groundwater, plant uptake rates, and other processes. Nitrate concentrations now observed in the groundwater basin might be a result of land use practices from several decades ago.

High concentrations of nitrate in drinking water supplies are a particular concern for infants. Nitrate concentrations above the federal and state maximum contaminant level (MCL) of 45 milligrams per liter (45 mg/L NO₃) have been linked to cases of methemoglobinemia ("Blue Baby Syndrome") in infants less than 6 months of age. In addition, public health agencies, including the California Department of Health Services, are conducting research to determine whether excess nitrate in food and drinking water might also have long term carcinogenic (tendency to cause cancer) or teratogenic (tendency to cause fetal malformations) effects on exposed populations.

Communities in the South County rely solely on groundwater for their drinking water supply. The District created the Nitrate Management Program in October 1991 to manage increasing nitrate concentrations in the Llagas Subbasin.

In June of 1992, an extensive study was initiated to review historical nitrate concentrations, identify potential sources, collect and analyze groundwater samples for nitrate, and develop a set of recommendations for the prevention and control of nitrate loading in South County. The results of the study, completed in February 1996, indicated that nitrate concentrations in the Llagas Subbasin are generally increasing over time and that elevated concentrations still exist throughout the subbasin.

In addition, the study found that there are many sources of nitrate loading in Llagas Subbasin. The major sources of nitrate are fertilizer applications, and animal and human waste generation. The southern portion of Santa Clara County has historically been an agricultural area. Only in recent years has agricultural acreage declined due to residential growth. However, due to the slow movement of surface water to the water table, residual nitrate concentrations in the soil from past practices may continue to contribute to increasing nitrate concentrations in the groundwater for several years or decades to come.

The specific recommendations of the study were the following: increase public education to reduce loading and exposure; blend water to reduce exposure; review and possibly revise the well standards; increase the level of regional wastewater treatment in order to reduce reliance on septic systems; increase point source regulation; conduct recharge feasibility studies; increase monitoring of the groundwater basin; and to consider alternative water supplies, treated surface water, water recycling and enhanced sewage treatment technologies for on-site systems.

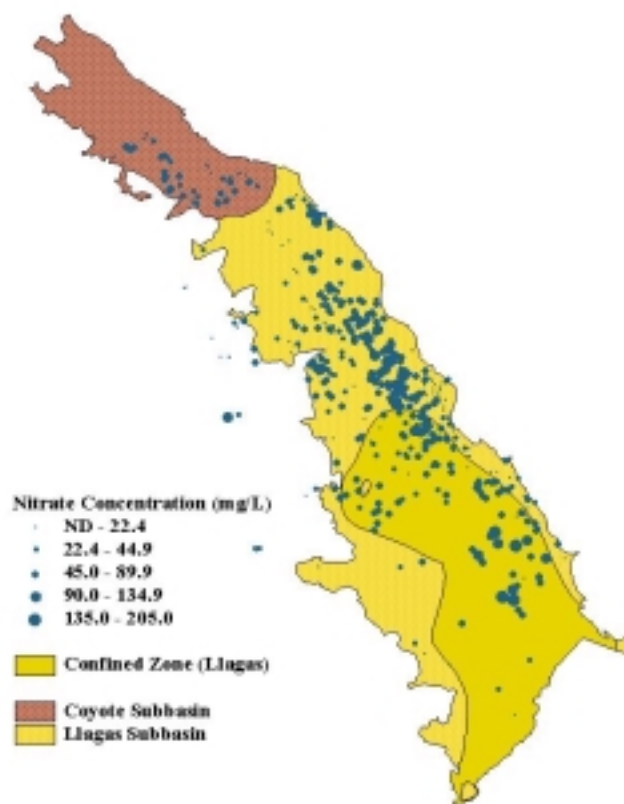
In 1997, the District began implementing the public education portion of the study recommendations. A large agricultural outreach effort was initiated. As part of that outreach, the District entered into a contract with a Mobile Irrigation Lab to offer free irrigation evaluations to farmers in order to improve the efficiency of their irrigation systems and scheduling. By improving the irrigation efficiency and distribution uniformity, the irrigators can reduce the amount of water and nitrate leached beyond the active root zone of the crop and into the groundwater. Over 250 people have attended seminars to increase their awareness of the mobile lab and to learn nitrate-sampling and nitrogen management techniques. Approximately 150 free soil nitrate test kits have been prepared and distributed. A series of 5 fact sheets on Nitrogen and Water Management in Agriculture was produced in cooperation with Monterey County Water Resources Agency and the Pajaro Valley Water Management Agency. English and Spanish versions have been distributed to the agricultural community through a series of seminars, mobile lab operators, other agricultural agencies and the on the District's new Agricultural web page.

To reduce exposure, reduce loading and monitor occurrence, a large-scale public outreach effort was launched offering a free nitrate analysis to all well water users in the Llagas and Coyote Subbasins. Approximately 2,500 residents were notified through

direct mailings about the program and the issues surrounding nitrate in drinking water. An unknown number were notified through newspaper, radio and television coverage. More than 600 private wells shown in Figure 5-1 have been tested for nitrate. Along with the results of the testing, residents were mailed a fact sheet describing what nitrate is, where it comes from, what the health effects are, how to prevent further loading and where to find more information.

Of the 600 private wells tested, more than half exceed the federal safe drinking water standard for nitrate. Of those that exceed the standard, half of the residents use an alternate water source or point-of-use treatment for their drinking water. The data also indicated that nitrate concentrations in the Llagas Subbasin continue to increase, that nitrate concentrations in the Coyote Subbasin have remained steady, and that high concentrations of nitrate are sporadically located throughout both subbasins. A report on the findings was produced in December 1998 and was distributed to several local and state agencies. These elevated nitrate levels were detected only in private wells; it should be noted again that public water supply wells within the County meet drinking water standards.

Figure 5-1
South County Nitrate Concentration

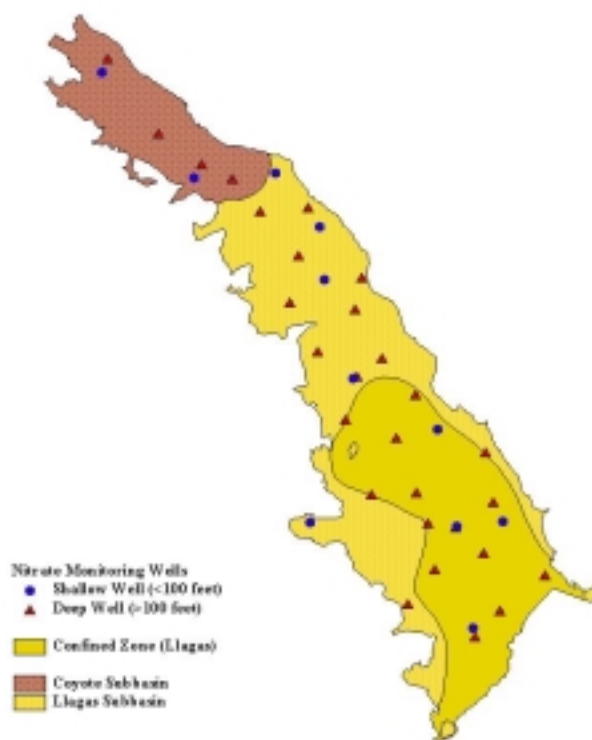


Current Status

To reduce nitrate loading, the District continues to schedule mobile lab evaluations and agricultural seminars. These seminars focus on how to apply irrigation water more efficiently and how to conduct soil testing for nitrate. In addition, the District is a cooperator on a grant with a soil scientist to establish field trials demonstrating and evaluating the effectiveness of in-field nitrate testing in drip and sprinkler irrigated vegetables.

To monitor nitrate occurrence, the District is conducting a comprehensive monitoring effort to track seasonal, areal, vertical and long-term trends in nitrate concentrations. The current monitoring program shown in Figure 5-2 consists of 42 deep groundwater wells (greater than 100 feet deep) and 15 shallow monitoring wells (less than 100 feet deep). The shallow monitoring wells will allow us to track what we might expect to see in the deeper wells in the future. Network wells are being monitored on a quarterly basis to track seasonal variations.

Figure 5-2
Current South County Nitrate Monitoring Network



To reduce nitrate exposure, the District is working with the Santa Clara County Department of Environmental Health to produce a well owner's guide. Among other things, the guide will contain information on recommended sampling, testing and disinfecting practices, as well as measures to protect against contamination.

Future Direction

Continued public education and outreach will remain the focus of the nitrate management program to reduce further loading and prevent possible exposure. If nitrate concentrations continue to increase at all depths, more extensive action may be required. The District may need to investigate alternate water supplies for the many private well water users in the area. Alternate water supplies could include a water treatment plant to remove the nitrate from the existing groundwater supply or the treatment of water from the San Felipe pipeline.

More research is needed to determine how much nitrate is contributed through the various manure management practices currently used. Best Management Practices (BMPs) for manure management need to be determined, and they need to be communicated to the public in a manner that will encourage adoption. More research is also needed regarding reduction of nitrate loading from septic systems; specifically, regarding whether the benefit of removing or reducing septic system loading justifies the economic and political cost of increasing sewer line connections.

To achieve the objective of monitoring nitrate occurrence, the District will continue to sample the existing monitoring network in the Llagas and Coyote Subbasins on a quarterly basis. Two years of quarterly data has been collected so far and staff are in the process of analyzing the data for seasonal, areal, and long-term trends. Staff is beginning a thorough evaluation of the extent and severity of nitrate contamination in the Santa Clara Subbasin, based on water quality data from the District's groundwater monitoring program and the water retailers.

The District may also investigate the feasibility of remediating nitrate contamination. There is some indication that nitrate concentrations around recharge facilities are lower than elsewhere. This finding would need to be confirmed as part of an investigation into reducing nitrate concentrations by additional recharge. Similarly, the District may be able to remediate nitrate contamination by setting up several pump and treat operations. High nitrate water would be pumped out of the basin, treated and injected back into the basin. Phytoremediation, which uses deep-rooted plants to draw the nitrate out of the vadose zone before it can reach groundwater, may be employed in some areas. A fourth possibility is reactive zone remediation where a reagent is injected into the system to intercept and immobilize or degrade the nitrate into a harmless end product. A thorough investigation of any remediation technology would need to occur before prior to its adoption.

SALTWATER INTRUSION PREVENTION

Program Objective

The objective of the Saltwater Intrusion Prevention Program is to monitor and to protect the groundwater basin from seawater intrusion.

Background

The movement of saline water into a freshwater aquifer constitutes saltwater intrusion. This potential exists in groundwater basins adjacent to the sea or other bodies of saline water. Intrusion of saltwater into a freshwater aquifer degrades the water for most beneficial uses and, when severe, can render it virtually unusable. Salty water can corrode holes in well casings and travel vertically to other aquifers not previously impacted. Once freshwater aquifers are rendered useless by a severe case of saltwater contamination or intrusion, it is extremely difficult and costly to reclaim them.

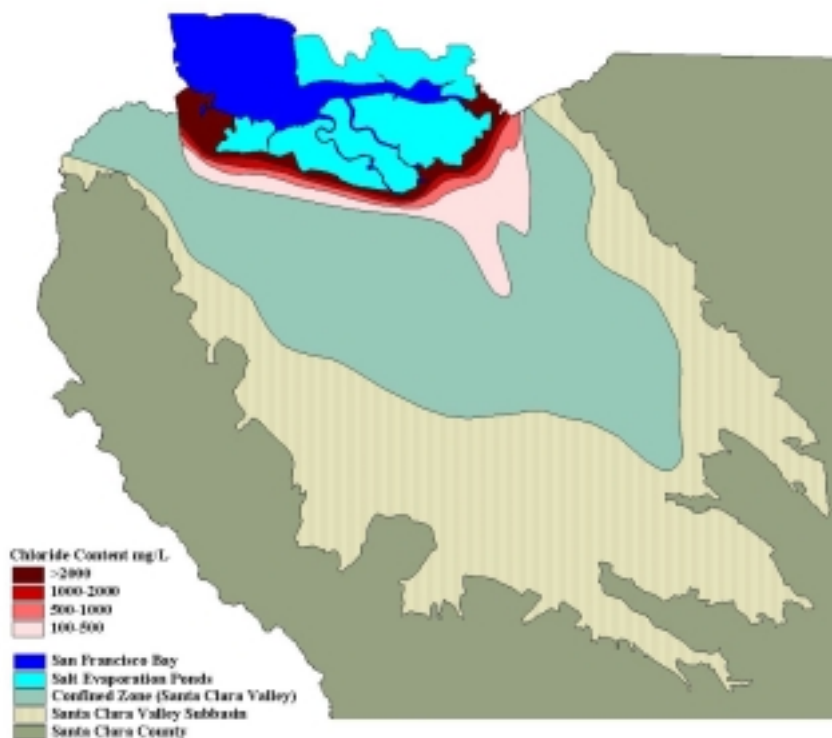
Comparison of older mineral analyses of groundwater from wells in the San Francisco bayfront area in Santa Clara and Alameda counties, some dating back to 1907, with more recent data shows that saltwater intrusion has occurred in the upper aquifer. With much higher water demands after World War II and the occurrence of land subsidence, saltwater intrusion conditions became aggravated and encompassed a portion of the baylands (the area adjacent to the southern San Francisco Bay). Bayshore Freeway (U.S. Route 101) and the Nimitz Freeway (Interstate 880) delineate the southern limits of this area.

The alluvial fill deposits of the Santa Clara Valley Subbasin in the flat baylands area consist of thin aquifers amongst abundant clays. The aquifers are broadly grouped into two water-bearing zones referred to as the “upper aquifer zone,” which usually occurs at depths less than 100 feet, and the “lower aquifer zone,” which usually occurs at depths greater than 150 to 250 feet, and which constitutes the potable aquifer system. Previous studies indicate the upper aquifer zone fringing San Francisco Bay is widely intruded by saltwater. The lower aquifer zone has pockets of small areas of elevated salinity associated with migration through abandoned wells.

Within the upper aquifer zone, the “classical case” of intrusion which occurs by displacement of freshwater by seawater and is indicated by total dissolved salt content over 5,000 mg/L, has progressed only a short distance inland from the bayfront, estuaries or salt evaporator ponds as shown in Figure 5-3. This intrusion had been induced when pumping of the upper aquifer and land subsidence reversed the hydraulic gradients, which had originally been toward the Bay. A large mixed transition zone precedes this intruding front with its outer limit arbitrarily defined by the 100 mg/L chloride line.

The greatest inland intrusion of the mixed transition water occurs along Guadalupe River and Coyote Creek. The large mixed transition zone is caused by saltwater moving upstream during the high tides and leaking through the clay cap into the upper aquifer zone when this zone is pumped. Land surface subsidence has aggravated the condition of intrusion by allowing farther inland incursion of saltwater up the stream channels from the Bay and by changing the gradient directions.

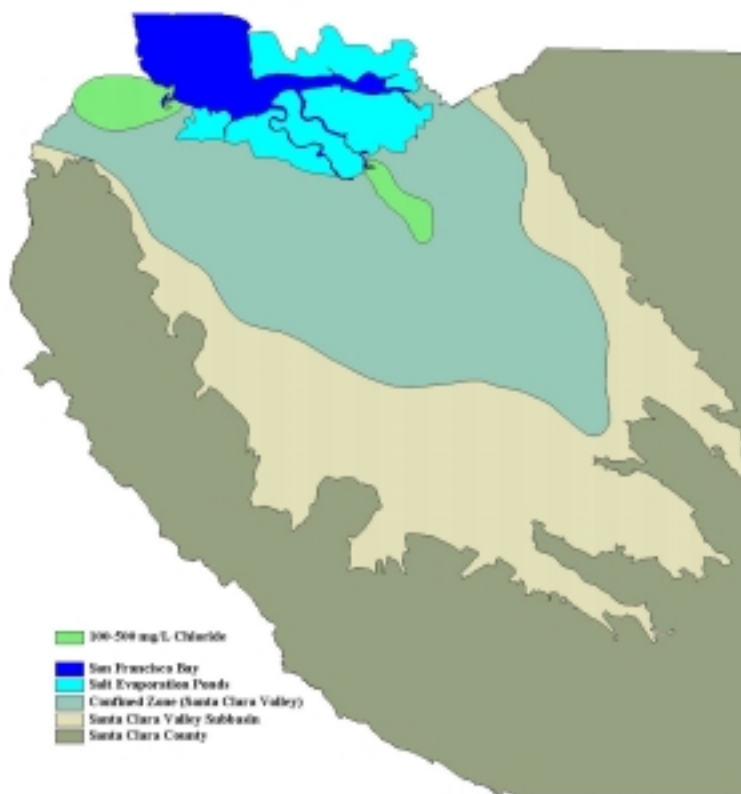
Figure 5-3
Upper Zone Saltwater Intrusion



Data has revealed a local area of high salt concentration in the upper aquifer zone in the Palo Alto bayfront area. This locally concentrated groundwater has moved inland historically and has the potential to continue farther inland. It is in this area that the District constructed a 2-mile-long hydraulic barrier in order to prevent further intrusion and to reclaim portions of the intruded aquifers.

The lower aquifer zone is only mildly affected; the area of elevated salinity encompasses a much smaller area than that of the upper aquifer zone (Figure 5-4). The contaminated lower aquifers lie beneath the intruded portion of the upper aquifer zone. The areal distribution and the variable concentration of the saltwater contamination with time imply that the intrusion into the lower aquifer occurred as seasonal slugs of contaminated water were induced from either the surface or the upper aquifer. As the clay aquitard between the upper and lower aquifer zones is essentially impermeable, the salinity in the lower aquifer zone is thought to have occurred through improperly constructed, maintained or abandoned wells. As a result of this finding, the operation of the hydraulic barrier was discontinued.

Figure 5-4
Lower Zone Saltwater Intrusion



The resumption of land surface subsidence is the greatest potential threat to aggravating the intrusion condition, as it would further depress the land surface fronting South San Francisco Bay. This would increase the inland hydraulic gradient relative to the classical intrusion front and expose a larger area of the upper aquifer zone to intrusion as a consequence of the greater inland incursion of tidal waters. A lowering of the piezometric level in the lower aquifers, which is related to the cause of subsidence, will also increase the potential for intrusion into the lower zone.

Current Status

As part of the Saltwater Intrusion Prevention Program, the defective wells in the northern Santa Clara Valley Subbasin along San Francisco Bay were to be located and destroyed. The District conducted an extensive program of locating and properly destroying these contaminant conduit wells. After these defective wells were located, the owners were required to properly destroy them under District ordinance, or by litigation if necessary. From District records, a list of 45 defective wells to be destroyed was generated.

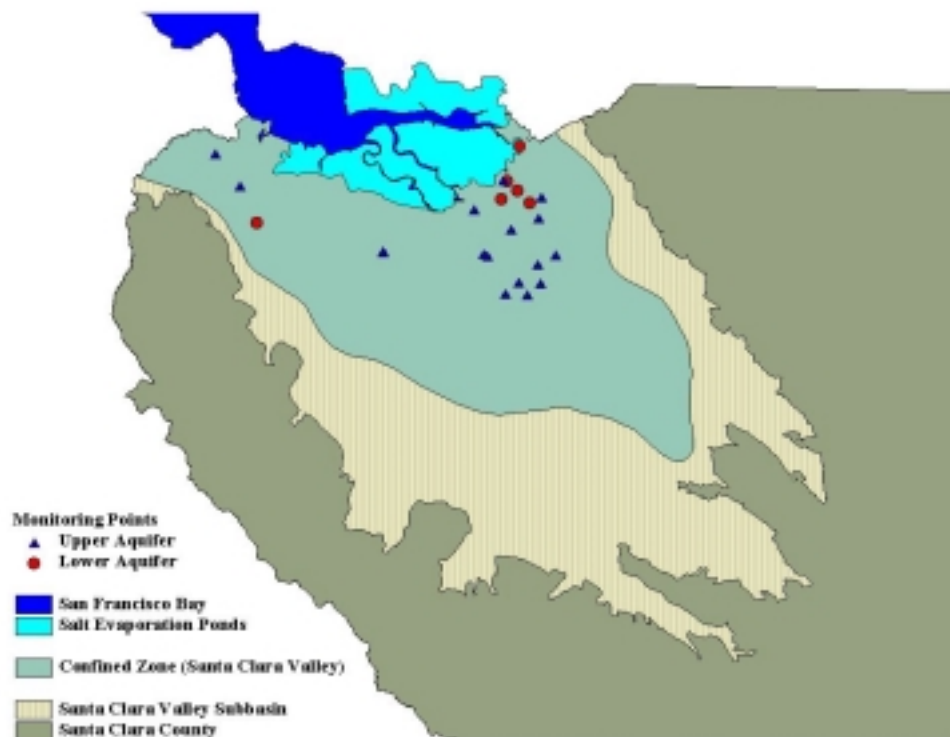
Since the inception of this program, the Board has authorized a more comprehensive well destruction program, through which abandoned wells near areas of known chemical contamination can be destroyed with District funds. This program began in October 1984, and was in part a result of general concerns about contamination of useable aquifers by saltwater as well as by industrial chemicals throughout the County. Several

wells in the area were included in this parallel program, many of which were not identified as defective or potential conduit wells.

Of the 45 potential conduit wells, six were removed from the list as they do not appear to be acting as conduits. In 1985, the District's Groundwater Protection Section pursued destroying the remaining 39 wells through District Ordinance No. 85-1. This ordinance gives the District authority to require owners of wells determined to be "public nuisances" to destroy the wells or to upgrade them to active or inactive status. Of the 39 potential conduit wells identified, 10 were not located and were presumed destroyed without a permit. The remaining wells were all properly destroyed.

The District continues to monitor the extent and severity of saltwater intrusion. The current Saltwater Intrusion Monitoring Program consists of 21 monitoring wells that are sampled quarterly as shown in Figure 5-5. Five of these wells monitor the status of saltwater intrusion in the lower aquifer zone, while the remaining 16 wells monitor the upper aquifer zone. Originally, the program consisted of 25 wells. Eight of these wells could not be located during recent field investigations and presumably were destroyed by the owners. However, work is commencing to replace the lost wells with District-owned wells and restore the monitoring program to its original form.

Figure 5-5
Saltwater Intrusion Monitoring Locations



Future Direction

The present status of the Saltwater Intrusion Prevention Program is subject to change, depending upon the future basin operation and groundwater demand in the area. The two economically practical ways to prevent or minimize any further intrusion are through management of the groundwater basin and strict enforcement of ordinances on well construction and destruction standards. These approaches have been adopted by the District and should continue to be implemented.

Saltwater intrusion continues to be monitored. Monitoring data are stored by electronic and conventional means. Electronic storage consists of a geographically referenced database of monitoring wells and a related database of water quality information. Conventional storage consists of filing hard copies of laboratory analytical reports in the appropriate well folders and providing data to DWR. Biennial evaluations of the data are documented in the General Groundwater Quality Monitoring Program reports. The monitoring program, including well location and sampling frequency, will be evaluated with respect to long-term groundwater quality protection strategies and overall basin management.

WELL CONSTRUCTION/DESTRUCTION PROGRAMS

Well Ordinance

Program Objective

The objective of the Well Ordinance Program is to protect the County's groundwater resources by ensuring that wells and other deep excavations are constructed, maintained and destroyed such that they will not cause groundwater contamination. To meet this goal, the Well Ordinance Program:

- Develops standards for the proper construction, maintenance, and destruction of wells and other deep excavations.
- Educates the public, including contractors, consultants and other government agencies about the Well Ordinance and the Well Standards.
- Verifies that wells are properly constructed, maintained and destroyed using a permitting and inspection mechanism.
- Takes enforcement action against violators of the well ordinance.
- Maintains a database and well mapping system to document information about well construction and destruction details, a well's location, and well permit and well violation status.

The scope of the Well Ordinance Program includes all activities relating to the construction, modification, maintenance, or destruction of wells and other deep excavations in the County.

Background

In the late 1960s, following post-war industrialization and development of Santa Clara County, it became apparent that abandoned or improperly constructed wells and other deep excavations (e.g. elevator shaft pits) are potential conduits through which contaminants can travel from shallow, potentially contaminated aquifers, to deeper drinking water aquifers. Recognizing this, in 1971, a District advisory committee consisting of representatives from local agencies, the District, and the Association of Drilling Contractors, was established.

The committee was charged with the development of well construction standards and standards for the proper destruction of abandoned wells. The Board adopted standards for well destruction and construction in October 1972 and January 1975, respectively. In 1975, the District Board of Directors passed the first District Well Ordinance.

Both the Standards and the Well Ordinance have undergone numerous revisions. The most recent version of the well standards, the *Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County*, was adopted by the Board in July 1989. The Board passed district Well Ordinance 90-1 in April 1990. These documents address the permitting and proper construction and destruction of wells and other deep excavations, including water supply wells, monitoring wells, remedial extraction wells, vadose wells, cathodic protection wells, injection wells, storm water infiltration wells and elevator shaft pits.

Beginning in 1975, well construction and destruction permits were required by the District and the District began inspecting every well that was constructed. Well destruction activities were first inspected by the District in 1984.

Since the inception of well permitting, the annual number of permits issued has greatly increased. The District issued approximately 400 well permits in 1976, the first full year of permitting, to a maximum of approximately 2,544 permits in 1994.

The District is in compliance with Sections 13803 and 13804 of the State Water Code and thereby has the authority to assume the lead role in the enforcement of the State Well Standards, the assignment of State Well Numbers, and the collection of State Drillers Reports for all wells constructed or destroyed in Santa Clara County.

Current Status

To date, the District has permitted and inspected the construction of approximately 3,000 water supply wells, 22,000 monitoring wells, 4,000 exploratory borings, and the destruction of 9,500 wells under the Well Ordinance Program.

The District has recently completed converting the paper-based well maps to a GIS based well mapping system.

Future Direction

In order to continue protecting the District's groundwater resource, the District will continue implementation of the program and will continue to regulate the construction and destruction of wells in the County. District staff will re-write District's well standards and ordinance to address recent changes in well construction and destruction techniques. District staff is also currently evaluating District's existing well information database and would like to convert the database into a relational database format and link it to the newly developed GIS based Well Mapping System.

Dry Well Program

Program Objective

The objective of the Dry Well Program is to minimize the impacts of dry wells on groundwater quality. The main objectives of this program are to:

- Control installation of new dry wells.
- Destroy existing dry wells that have contaminated or may contaminate groundwater.
- Educate planning agencies and the public about the threat that dry wells pose to groundwater quality.

Background

Dry wells, also known as storm water infiltration devices, are designed to direct storm water runoff into the ground. Storm water runoff can carry pollution from surface activities. Because dry wells introduce runoff directly into the ground, they circumvent the natural processes of pollution breakdown and thereby increase the chance of groundwater contamination. Additionally, dry wells have been sites of illegal dumping of pollutants.

In Santa Clara County, at least 8 serious contamination sites were caused or aggravated by the presence of dry wells introducing contamination into the groundwater. One dry well site has a solvent plume more than 2,000 feet long and more than 200 feet deep in a recharge area of South County where the only source of drinking water is groundwater.

In 1974, the Environmental Protection Agency (EPA) developed the Underground Injection Control Program under the Safe Drinking Water Act. The program requires the owners and operators of all shallow drainage wells to submit information regarding the status of each well to the EPA. The Regional Board adopted the "Shallow Drainage Wells" amendment to the Basin Plan in 1992. The Basin Plan amendment requires the local agency to develop a shallow drainage well control program that would locate existing shallow wells and establish a permitting program for existing and new wells.

In 1991, the District and municipal agencies began development of a Storm Water Infiltration Policy to satisfy Regional Board requirements. In August 1993, the District adopted Resolution 93-59 regarding Storm Water Infiltration Devices.

Current Status

Since 1993, owners of dry wells deeper than 10 feet have been required to register their wells by filing a “Notice to Continue Use” with the District. Dry well owners can continue using their wells as long as the well is not an immediate threat to groundwater quality. Local cities, businesses, contractors and private citizens regularly call for District guidance on dry wells.

The District continues to issue permits for dry wells greater than 10 feet deep and for the destruction of dry wells. District staff advise the public and planning agencies about the appropriate use of dry wells to mediate storm water problems generally and on a case-by-case basis. District staff continue to work with local programs to clarify the District dry well policy. Local inspecting agencies continue to work with the District to locate and register dry wells.

Future Direction

The Dry Well Program is being incorporated into the Well Ordinance Program. Specific standards for dry wells will be incorporated into the next revision to the Well Standards. These standards include prohibiting the construction of dry wells greater than 10 feet deep and defining dry wells to include all shallow drainage wells, not just shallow drainage wells receiving storm water. The purpose of revising the program to incorporate it into the Well Ordinance Program is to clarify permitting and construction standards for dry wells, to expand the definition of devices covered by the Well Standards so that all wells that bypass natural protection processes are subject to standards for protecting groundwater, and to simplify the process by which dry wells are permitted.

Abandoned Water Well Destruction Assistance

Program Objective

The objective of the Abandoned Well Destruction Assistance Program is to protect the County’s groundwater resources by helping property owners properly destroy old, abandoned water supply wells that they have discovered.

To meet the program’s objective, the District:

- Passed a Board Resolution (94-87) allowing District assistance to property owners who discover abandoned wells.
- Enters into annual contracts with well drillers to complete work associated with the project.
- Destroys abandoned wells for property owners.

Background

Due to the agricultural history of the County and to subsequent post-World War II development, many former water supply wells were abandoned and buried and remain

potential vertical conduits that may transport contaminants into the District's deep, water supply aquifers.

Some estimates indicate that there may be as many as 10,000 abandoned water supply wells within the boundaries of the Santa Clara Subbasin. Since there are no official records for these wells, the District has no knowledge of their existence or their locations.

In the mid-1980s, the District took a proactive stance on active and abandoned water supply wells found within known contamination plumes. At that time, with assistance from the Regional Board, the District actively searched for and destroyed known active wells and abandoned wells.

However, when abandoned water wells were discovered in areas not threatened by known groundwater contamination, they were not included in the District's well destruction efforts, but instead were treated as well violations under the Well Ordinance Program. As well violations, the District proceeded with enforcement action to force the property owner to properly destroy the well.

Unfortunately, this enforcement action often took months to complete. Property owners often didn't have the \$3,000 to \$15,000 dollars needed to destroy the well and had to secure loans to complete the destruction. Many property owners had negative feelings about the District after the enforcement action, especially considering that most property owners had no previous knowledge of the well and when they had discovered the well, they had been the first to inform the District of its existence.

District staff believed that while a well was found on an owner's property (and according to the Well Ordinance, that the property owner is responsible for destroying it), the owner wasn't actually responsible for the well's current status (abandoned and buried) and because the destruction of the well was in the best interest of the District, that the District should destroy it.

Therefore, in 1994, the District initiated the Abandoned Well Destruction Assistance Program to aid property owners who happen to discover an abandoned water supply well on their property. Under the Abandoned Well Destruction Program, the District destroys abandoned water wells if: 1) the property owner had no previous knowledge of the well, 2) the well was not registered with the District, 3) the well has no surface features that would have obviously indicated its presence, and, 4) the property owner enters into a Right of Entry Agreement with the District.

Current Status

Since the program's inception in 1994, the District has destroyed 108 abandoned wells under the Abandoned Well Destruction Program. Most of these wells were first discovered and reported to the District because they were flowing under artesian pressure.

Future Direction

Staff will continue to implement the program. Annually, staff receives reports of approximately 20 wells that meet program criteria and staff expect that this trend to continue.

WELLHEAD PROTECTION

Program Objective

The Wellhead Protection Program (WHP) represents the groundwater portion of the District's Source Water Assessment Program. The objective of the Wellhead Protection Program is to identify areas of the groundwater basin that are particularly vulnerable to contamination. The District uses this knowledge to focus groundwater protection, monitoring, and cleanup efforts.

Background

Groundwater vulnerability is based on groundwater sensitivity to contamination and the presence of potentially contaminating activities. Groundwater sensitivity is evaluated based on hydrogeology and groundwater use patterns. Areas with shallow groundwater, high recharge, high conductivity aquifers, permeable soils and subsurface materials, mild slopes, and high groundwater pumping rates are most sensitive to contamination. The District compiles data on hydrogeologic conditions, pumping patterns, and contamination sources, and uses GIS technology to identify areas of the groundwater basin that are particularly vulnerable to contamination.

The District first began compiling groundwater protection data in the late 1980's. In 1989, the District, in collaboration with the U.S. Environmental Protection Agency (EPA), conducted a pilot project in the Campbell area to evaluate the usefulness of GIS for groundwater protection. Data on roads, city boundaries, hazardous material storage sites, groundwater recharge facilities, wells and hydrogeology were collected and used to create GIS coverages for the Campbell study area. The project team used GIS to evaluate groundwater sensitivity and draw areas to be protected around production wells. The study concluded that GIS is a feasible tool to use for WHP programs.

After the Campbell pilot study, the District expanded its groundwater protection data collection effort to encompass the entire County. Staff developed Countywide GIS coverages of active wells, abandoned and destroyed wells, geology, soil types, depth to groundwater, leaking underground storage tank sites, and petroleum storage facilities. This data, along with water quality data, is used to identify and evaluate threats to groundwater quality.

Current Status

The District created a groundwater sensitivity map to evaluate land use development proposals and make recommendations for appropriate groundwater protection strategies. In 1996, the District built upon the pilot GIS project to assess groundwater sensitivity throughout the groundwater basin using EPA's DRASTIC method. DRASTIC stands for

depth to water table, net recharge, aquifer media, soil media, topography, impact of the vadose zone, and hydraulic conductivity of the aquifer. The DRASTIC method is a quantitative evaluation of these hydrogeologic factors to assess relative groundwater sensitivity. The results of this effort were several GIS coverages and a groundwater sensitivity map (Figure 5-6), which the District uses to review land development proposals. In sensitive groundwater areas, the District requests that planning agencies require, and that property owners implement, best management practices and other protection activities beyond those required by minimum standards.

Figure 5-6
Groundwater Sensitivity Map



Staff uses information on land use and the location of contaminated sites to help identify and evaluate the sources of contamination that are detected in wells. Although groundwater quality is generally good throughout the basin, contamination is occasionally detected in individual wells. By quickly locating contamination sources, we can work with the regulatory agencies to ensure prompt and adequate cleanup.

The District also uses information on well construction, well location, well pumping, leaking Underground Storage Tank (UST) site locations and conditions, land use, and hydrogeology to prioritize leaking UST sites and identify vulnerable water supply wells. Sites that pose the greatest threat to groundwater supplies are the first to receive detailed regulatory oversight. Staff also uses this information to select wells for groundwater monitoring and special studies.

District staff is working with local water retailers on the state's Drinking Water Source Assessment and Protection (DWSAP) Program. The state's DWSAP Program is required by the 1996 reauthorization of the federal Safe Drinking Water Act. California has until May 2003 to assess all of its drinking water sources for vulnerability to contamination. The District developed a GIS-based wellhead assessment and protection area delineation tool, which delineates protection areas according to state guidelines. Once the vulnerability assessments are completed in Santa Clara County, the District will work with the water retailers to ensure that the greatest threats to their drinking water supply wells are being addressed.

Future Direction

District staff continues to create GIS coverages that help assess groundwater vulnerability. Some coverages that are in development include solvent contamination sites and plumes, dry cleaners, hazardous materials storage facilities, septic system locations, and sewer lines. The District has found great utility in these GIS coverages, and is beginning to work with other agencies and organizations to determine how we can share GIS information and increase its use for groundwater protection. We will continue to use this information to identify areas vulnerable to groundwater contamination, and focus our monitoring, protection, and cleanup efforts.

LEAKING UNDERGROUND STORAGE TANK OVERSIGHT

Program Objective

The objective of the Leaking Underground Storage Tank Oversight Program (LUSTOP) is to protect the groundwater basin from water quality degradation as a result of releases of contaminants from underground storage tanks. The District provides regulatory oversight of the investigation and cleanup of fuel releases from USTs for most of Santa Clara County.

Background

In 1983, the State Legislature enacted the UST Law [Chapter 6.7 of the Health and Safety Code] authorizing local agencies to regulate the design, construction, monitoring, repair, leak reporting and response, and closure of USTs. In the early 1980s, several drinking water wells in the County were shut down as a result of contamination by chlorinated solvents. In 1986, the Board decided to implement a leaking UST oversight program for petroleum fuels in coordination with the San Francisco Bay Regional Water Quality Control Board (RWQCB). The District Board recognized that releases from USTs affect groundwater quality and that effective protection of the County's groundwater basin demanded a proactive approach. They committed financial and technical resources in-house to quickly initiate the program.

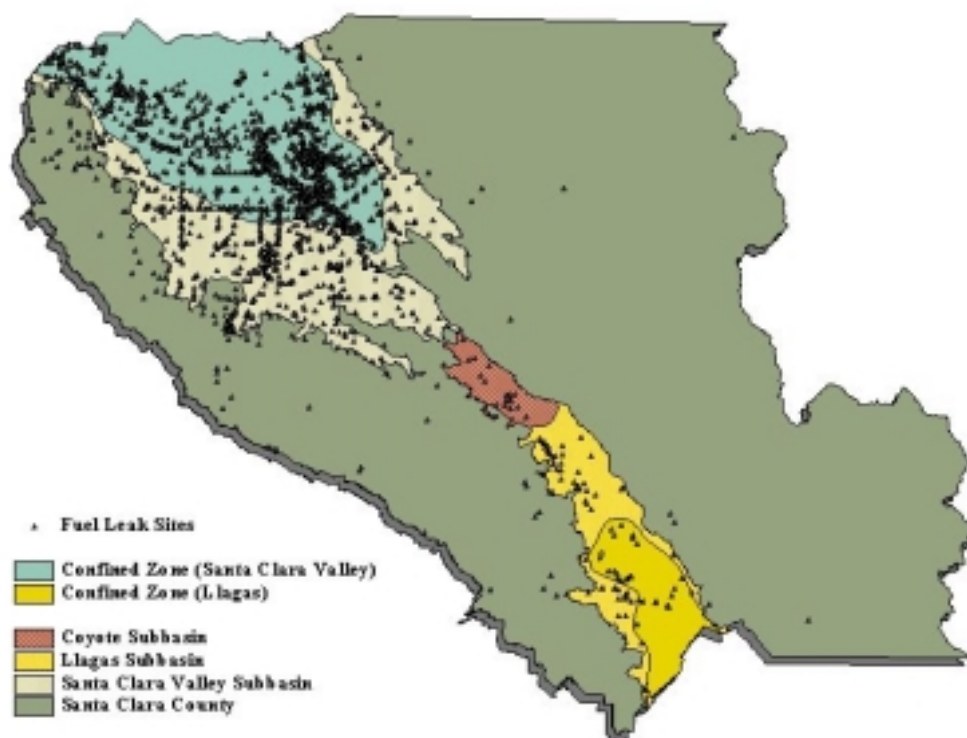
In 1987, the District entered into an informal agreement with the San Francisco RWQCB to create a pilot oversight program. At that time more than 1,000 fuel leaks had been reported within the County. The District developed an in-house technical group of employees capable of providing regulatory oversight of the investigation and cleanup of

releases from USTs. In 1988, the District and the County of Santa Clara entered into a contract with the State Water Resources Control Board to implement one of the State's first Local Oversight Programs. This allowed the District to get reimbursed by state and federal funds for costs associated with operation of the program.

The State Water Resources Control Board (SWRCB) amends its Local Oversight Program contract with the District and the County annually. Over the years, many changes have occurred in the UST regulatory process as new laws were passed, scientific knowledge improved, and new investigation and cleanup strategies became available. The District's program actively participates in ensuring that new laws and regulations continue to protect groundwater quality into the future. The District has been at the forefront of several initiatives for improving the effectiveness and efficiency of our regulatory oversight efforts and the cost-effectiveness of corrective action while protecting human health, safety, the environment and water resources.

Every leaking petroleum UST case is currently assigned to a District caseworker who provides technical and regulatory guidance to responsible parties and their consultants (Figure 5-7).

Figure 5-7
Fuel Leak Cases in Santa Clara County



The District only provides regulatory oversight on investigation and cleanup at UST sites where a release has occurred. Tank removals, leak prevention, and UST release detection activities are overseen by one of 10 other agencies, usually the local fire department. Each agency has jurisdiction over a designated geographical area in the County. If there is evidence of a leak or if contamination is detected, an agency inspector or UST owner/operator notifies the District and/or the Regional Board. The District reviews the data to confirm the release, lists the site on the Leaking Underground Storage Tank Oversight Program database, and notifies the responsible party and the SWRCB. The District then determines if the unauthorized release poses a threat to human health and safety, the environment, or water resources and, if necessary, a caseworker requests additional investigation and cleanup.

To get case closure for the release, the responsible party must provide evidence that the release does not pose a significant threat to human health and safety, the environment or water resources; or, that the release has been adequately investigated and cleaned up. Fuel leak investigation and cleanup is closely monitored by a caseworker, and the case is promptly closed when the unauthorized release no longer poses a threat to human health, safety, the environment or water resources.

Current Status

As of January 2000, a total of 2,315 fuel leak cases have been reported in the County, the majority of which have affected groundwater. Approximately 1,650 (71 percent) of reported leak cases have been closed. About 575 cases are currently within the District's UST program, while about 75 cases receive Regional Board oversight. As a local oversight program, the District has made significant progress in closing low-risk sites and sites that have performed appropriate corrective action to reduce contamination to below levels of regulatory concern.

The presence of Methyl tert-Butyl Ether (MTBE) in gasoline has precipitated additional changes in the UST regulatory process and the manner in which sites are investigated and cleaned up. Since 1995, MTBE and other oxygenates have emerged as significant contaminants at fuel leak sites within the County, causing increased concern for the protection of groundwater resources. MTBE has been blended into gasoline in high percentages (up to 15 percent by volume) beginning in the winter of 1992 with the intent to significantly improve air quality. However, MTBE is a recalcitrant chemical in groundwater, as it does not undergo significant breakdown (bio-degradation) in groundwater. As a result, MTBE contamination can migrate considerable distances in groundwater and may impact wells miles downgradient. MTBE has been detected at more than 375 current fuel leak cases in the County, with concentrations at these sites ranging from 5 parts per billion to more than 1 million parts per billion. The District has taken a progressive and vigilant approach to protecting groundwater resources from MTBE contamination through the use of GIS to manage and analyze both UST site and regional information and in demanding a more intense and detailed level of work be performed at MTBE release sites.

The District is also very concerned regarding the increasing occurrence of MTBE at operating gasoline stations, which poses a significant threat to municipal drinking water wells within the County. In response to this threat, the District completed two studies of operating gasoline stations that were in compliance with the 1998 UST upgrade requirements. The first study, completed by Levine-Fricke in 1999, involved soil and groundwater sampling at 28 facilities to determine if releases were occurring from upgraded UST systems. MTBE was detected in groundwater at 13 of the 27 sites where groundwater was encountered. The second study, completed in 2000 (SCVWD, 2000), was a case study of 16 sites with operating USTs and high levels of MTBE in groundwater to evaluate whether undetected releases are occurring and to assess weaknesses in fuel storage, management, and delivery operation. Of the 16 sites studied, undetected releases were suspected at 13 sites.

Despite the fact that gasoline stations have been upgraded to meet stringent requirements, it is clear that faulty installations, poor maintenance and poor facility operation practices are resulting in leaks, and that improvements in the management of USTs are needed to prevent widespread contamination of groundwater.

Future Direction

The District continues to provide technical guidance and regulatory oversight to cases using improved scientific knowledge and latest investigation and cleanup strategies. The District will continue to work closely with local universities, research organizations, the water community, major oil companies, local, state and federal agencies, and the state and federal legislature to ensure that problems in the UST program are identified and that prompt effective solutions are implemented to protect groundwater quality.

An effective UST leak prevention and monitoring program is essential. There are several studies underway regarding the effectiveness of leak prevention and monitoring systems at sites. The District will continue to monitor all developments in this area and propose ongoing studies and/or regulatory changes. To ensure water resources are protected, the District actively participates in the legislative process to ensure that recalcitrant chemicals like MTBE that can cause significant groundwater degradation are not used in fuels.

One of the biggest concerns for the District regarding MTBE is the significance of both short-term and long-term threats to groundwater quality. The District is committing additional resources to gain a more extensive understanding of the groundwater basin, groundwater flow patterns, and groundwater pumping trends. This improved understanding allows for better decisions regarding: the level of oversight necessary at sites; how much investigation is required to properly understand the nature and extent of contamination at sites; the level of cleanup necessary to protect groundwater resources; and the effectiveness of the program in preventing significant short-term and long-term water quality degradation.

The District will continue responding to the public regarding USTs and groundwater contamination and will ensure that files and information are available for public review.

District staff plan to have all fuel leak files scanned and electronically accessible over the Internet in the near future. Program guidance, site information, and news of the latest developments in the program are available on the District's web site.

TOXICS CLEANUP

Program Objective

The objective of the Toxics Cleanup Program is to ensure the protection of the groundwater basins from water quality degradation as a result of toxics and solvent contamination and spills of other non-fuel chemicals. The District performs peer review of these cases and makes water use and geologic information available to the public and environmental consultants. District staff also provide expert technical assistance to the regulatory agencies (County of Santa Clara, San Francisco and Central Coast Regional Boards, Department of Toxics Substances Control, and the Federal Environmental Protection Agency) responsible for the oversight of investigation and cleanup at non-fuel contaminated sites within Santa Clara County.

Background

Since the late 1970s, the District has provided expert technical and hydrogeologic assistance to agencies having the legal responsibility for the protection of the water resources serving the needs of Santa Clara County. The discovery of groundwater contamination at Fairchild Semiconductor in 1981 resulted in heightening the awareness for the protection of groundwater quality and the need for the District to be actively involved in ensuring that appropriate investigation and cleanup of sites was undertaken in a timely manner. District staff were actively involved with the review and analysis of early laws governing the regulation of underground storage tanks and hazardous materials and in laws, regulations, and policies to ensure groundwater resource protection. District staff have documented the migration of contamination down abandoned wells and conduits and fashioned a well installation and destruction ordinance to ensure that wells were properly installed and potential conduits properly destroyed.

Current Status

The District has records of over 700 releases of non-fuel related cases involving the release of solvents, metals, pesticides, Polychlorinated Biphenyls (PCBs), and a variety of other chemicals in Santa Clara County. The San Francisco Bay RWQCB provides regulatory oversight on over 600 cases in the Santa Clara Valley and Coyote Subbasins. The Central Coast RWQCB provides oversight on an estimated 35 cases in the Llagas Subbasin. The California Department of Toxics Substances Control provides oversight of 17 cases and the Federal EPA provides oversight of 11 sites.

The District maintains an elaborate filing system for these cases that is heavily used by the environmental consultants and the public researching contaminated sites. District staff actively track and peer review the most serious of these cases (primarily the Superfund sites). Staff provide review and comment on Site Cleanup Requirements and Cleanup and Abatement Orders prepared by the Regional Boards and investigation and cleanup reports prepared for these sites. The District provides geologic and technical

expertise to responsible parties (site owners and operators) and their consultants and staff, and regularly participate in various committees and public meetings to ensure groundwater protection issues are properly addressed.

Future Direction

The District plans to continue these efforts in addition to conducting a review of all the recorded cases to ensure that all have been properly addressed by the various regulatory agencies. Many cases have remained “inactive” and may not have performed appropriate investigation and cleanup. The District plans to inform the regional boards and other agencies of these reviews and assist them to ensure appropriate work is performed. The District also plans to make more information available regarding geologic conditions and the status of solvent and toxics cases in GIS and over the Internet.

LAND USE AND DEVELOPMENT REVIEW

Program Objective

The objective of the Land Use and Development Review Program is to evaluate the land use and developments occurring within the County for adverse impacts to watercourses under District jurisdiction and to other District facilities, including the pollution of groundwater.

Background

Land development decisions made by the cities and the County influence a variety of issues related to water quality and quantity. The District reviews land development proposals, identifies any potential adverse impacts to District facilities and provides comments to the lead agency charged with making the final decision for the proposals. The District also reviews Draft Environmental Impact Reports (DEIRs) and/or EIRs and provides comments to the lead agency.

Current Status

The District reviews and comments on proposed land development, environmental documents and city and County General plans. Review of land development proposals includes a determination of direct and indirect impacts to District facilities. Indirect impacts could result from increased runoff and flooding due to new impervious surface or introduction of pollutants to a watercourse from construction activities or urban runoff. Direct impacts to watercourses under District jurisdiction are addressed through the District’s permitting program as defined by Ordinance 83-2.

This ordinance allows the District to investigate whether a proposed project or activity will:

- a. Impede, restrict, retard, pollute or change the direction of the flow of water.
- b. Catch or collect debris carried by such water.

- c. Be located where natural flow of the storm and flood waters will damage or carry any structure or any part thereof downstream.
- d. Damage, weaken, erode, or reduce the effectiveness of the banks to withhold storm and flood waters.
- e. Resist erosion and siltation and prevent entry of pollutants and contaminants into water supply.
- f. Interfere with maintenance responsibility or with structures placed or erected for flood protection, water conservation, or distribution.

If a project appears likely to do any of the above, the District may deny or conditionally approve the permit application for the proposed project.

Future Direction

The California Environmental Quality Act (CEQA) provides the District an opportunity to comment in areas relevant to the issues listed above; however, cities need to make certain these issues are adequately addressed and treated. The use of Ordinance 83-2 and CEQA have generally not effected adequate attention to these issues.

In years past the District has relied on local agencies to place conditions on development projects and to include provisions that address District water supply and flood protection measures. The recent increase in development and land use coupled with more stringent environmental concerns and requirements imposed by other regulatory agencies has made it necessary for the District to shift to a more proactive approach and to undertake greater participation in development planning activities. District land use and development review staff plan to participate on interagency project teams, conduct general plan review and revision, and development of relevant policies (such as riparian corridor and building setback policies). The program will also seek revisions to Ordinance 83-2, and greater education of land development planning staff and officials.

Additional Groundwater Quality Management Activities

Groundwater Guardian Affiliate

The District was designated as Groundwater Guardian Affiliate for the year 2000. Groundwater Guardian is an annually earned designation for communities and affiliates that take voluntary, proactive steps toward groundwater protection. The district earned the designation in 2000 based on activities such as conducting irrigation, nutrient, and pesticides management seminars, sponsoring a mobile irrigation management laboratory, and creating a prototype zone of contribution delineation tool for delineating wellhead protection areas. The Groundwater Guardian Program is sponsored by The Groundwater Foundation, a private, international, not-for-profit education organization that educates and motivates people to care about and for groundwater. The District will continue to participate in the program by submitting annual work plans and reports documenting our groundwater protection efforts.

Comprehensive Reservoir Watershed Management

The District has initiated a Comprehensive Reservoir Watershed Management Project to protect the water quality and supply reliability of the District's reservoirs. The District seeks to balance watershed uses, such as the rights of private property owners and public recreational activities, with the protection and management of natural resources. The District recognizes that preserving beneficial watershed uses can benefit reservoir water quality, which in turn benefits drinking water quality delivered to the District treatment plants and recharged into the groundwater basins.

Watershed Management Initiative

The District is an active participant in the San Francisco Bay Regional Water Quality Control Board's Santa Clara Basin Watershed Management Initiative (WMI). The purpose of the WMI is to develop and implement a comprehensive watershed management program. The goals of the WMI include balancing the objectives of water supply management, habitat protection, flood management, and land use to protect and enhance water quality, including the quality of water used for groundwater recharge and water in the groundwater basins. The WMI will develop a watershed management plan that will set out agreed upon actions to meet stakeholder goals, including water quality protection and enhancement.

Non-Point Source Pollution Control

The District along with other agencies is the co-permittee for National Pollution Discharge Elimination System (NPDES) permit number CAS029718. The co-permittees formed the Santa Clara Valley Urban Runoff Management Program in 1990 to develop and implement efficient and uniform approaches to control non-point source pollution in storm water runoff that flows to the South San Francisco Bay, in compliance with NPDES permit responsibilities.

Chapter 6 SUMMARY

The many groundwater management programs and activities described in this document demonstrate that the District is proactive and effective in terms of ensuring that groundwater resources are sustained and protected. A summary of existing District groundwater programs is presented here, organized by report section.

Groundwater Supply Management

The objective of the District's groundwater supply management programs is to sustain groundwater resources by replenishing the groundwater basin, increasing basin supplies, and mitigating groundwater overdraft. This is currently achieved through:

- In-stream recharge, including controlled and uncontrolled recharge through District facilities.
- Off-stream recharge through District percolation ponds and abandoned gravel pits, including activities to reduce turbidity of incoming water.
- Periodic water balance to reconcile water imports, inflows, releases, and changes in surface water storage.
- Direct injection recharge facilities.
- Water use efficiency programs.
- Estimation of operational storage capacity.
- Subsidence and groundwater flow modeling to evaluate potential impacts to the groundwater basin.
- Public outreach and education for water use efficiency programs.

Groundwater Monitoring

The District's groundwater monitoring programs provide basic data to assist in the evaluation of groundwater conditions. Programs include:

- Groundwater quality monitoring, including sampling for general minerals, trace metals, and physical characteristics.
- Groundwater elevation monitoring, including depth-to-water measurements and the development of groundwater contour maps.
- Groundwater extraction monitoring, which tracks groundwater use throughout the County.

- Land subsidence monitoring, which measures existing subsidence.

Groundwater Quality Management

Existing programs designed to protect the groundwater from contamination and the threat of contamination include the following:

- Nitrate management program designed to delineate, track, and manage nitrate contamination by monitoring nitrate occurrence, and by reducing further loading and the public's exposure to nitrate.
- Saltwater intrusion prevention program to prevent freshwater aquifers from degradation through monitoring and the sealing of contaminant conduit wells.
- Well construction and destruction programs to protect groundwater resources by ensuring that wells will not allow the vertical transport of contaminants.
- Wellhead protection program to identify areas of the basin that are particularly vulnerable to contamination to focus groundwater protection, monitoring, and cleanup efforts.
- Leaking underground storage tank oversight program to protect the groundwater from water quality degradation and provide regulatory oversight of investigation and cleanup of fuel releases from underground tanks.
- Toxics cleanup program to protect the basin from contamination by non-fuel chemicals.
- Land use and development review to evaluate land use proposals in terms of potential adverse impacts to District facilities.
- Public outreach and education for groundwater quality management programs.

Recommendations

In 1999, the District Board of Directors established Ends Policies that direct the Chief Executive Officer/General Manager to achieve specific results or benefits. The following Ends Policies are related to groundwater:

- E.1.1.2. The water supply is reliable to meet current demands.
- E.1.1.3. The water supply is reliable to meet future demands as identified in the District's Integrated Water Resource Plan (IWRP) process.
- E.1.1.4. There are a variety of water supply sources.
- E.1.1.5. The groundwater basins are aggressively protected from contamination and the threat of contamination.
- E.1.1.6. Water recycling is expanded consistent with the District's Integrated Water Resource Plan (IWRP) within Santa Clara County.
- E.1.2.2.3. Groundwater supplies are sustained.

Two of the Ends Policies directly relate to the management of groundwater resources: 1.1.5 - The groundwater basins are aggressively protected from contamination and the threat of contamination, and 1.2.2.3 - Groundwater supplies are sustained. As the District is now formally guided by these policies, we need to ensure that program outcomes match these ends.

Although the District manages the basin effectively, there is room for improvement of the groundwater programs in terms of meeting the Ends Policies and in the coordination and integration of the programs. Specific areas where further analysis is recommended include:

- 1. Coordination between the Groundwater Management Plan and the Integrated Water Resources Plan (IWRP)** – As the District’s water supply planning document through 2040, the IWRP has identified the operation of the groundwater basin as a critical component to help the District respond to changing water supply and demand conditions. Planning and analysis efforts for future updates of the Groundwater Management Plan and the IWRP need to be integrated in order to provide a coordinated and comprehensive water supply plan for Santa Clara County.
- 2. Integration of groundwater management programs and activities** – Individual groundwater management programs tend to be implemented almost independently of other programs. A more integrated approach to the management of these programs, and to the management of the basin overall needs to be developed. Integration of these programs and improved conjunctive use strategies will result in more effective basin management.
- 3. Optimization of recharge operations** – As artificial recharge is critical to sustaining groundwater resources, an analysis of the most effective amount, location, and timing of recharge should be conducted.
- 4. Improved understanding of the groundwater basin** – In general, the existing groundwater management programs seem to focus on managing the basin to meet demands and protecting the basin from contamination and the threat of contamination. However, improving the District’s understanding of the complexity of the groundwater basin is critical to improved groundwater management. The more we know about the basin, the better we can analyze the impact of different groundwater scenarios and management alternatives.
- 5. Effective coordination and communication with internal and external agencies** – Improved communication and coordination will lead to improved groundwater management programs. Increased sharing of ideas, knowledge, and technical expertise among people involved with groundwater at the District will result in increased knowledge, well-coordinated and efficient work, and well-informed analyses and conclusions. Improved coordination with external agencies, such as retailers and state and federal organizations, will result in improved knowledge of customer needs and increased awareness of District activities.

A detailed analysis of the areas above and of all groundwater programs as they relate to Ends Policies and the groundwater management goal is recommended.

The next update of the Groundwater Management Plan, scheduled for 2002, will address the issues above and the overall management of the basin by presenting a formal groundwater management strategy for achieving the groundwater management goal in a practical, cost-effective, and environmentally-sensitive manner. The update will evaluate each groundwater program's contribution and effectiveness in terms of the groundwater management goal and Ends Policies. Measurement criteria will be developed, and if there is no direct connection between the Ends Policies and a specific program, that program's contribution to other linked programs will be analyzed. The update will include recommendations for changes to existing programs or for the development of new programs, standards, or ordinances. The update will also develop an integrated approach for the management of groundwater programs, and for the management of the groundwater basin in general.

Groundwater is critical to the water supply needs of Santa Clara County. Therefore, it is of the utmost importance that the District continues the progress begun with this Groundwater Management Plan. Increased demands and the possibility of reduced imported water in the future make effective and efficient management of the groundwater basin essential. The Groundwater Management Plan and future updates will identify how the management of the groundwater basin can be improved, thereby ensuring that groundwater resources will continue to be sustained and protected.

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APPENDIX F

CALIFORNIA URBAN WATER CONSERVATION COUNCIL ANNUAL BEST MANAGEMENT PRACTICE REPORTS

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 01/22/1992, your Agency STRATEGY DUE DATE is: | 01/21/1994 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 1/22/1992 |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 7/1/1998 |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	3700	245
2. Number of surveys completed:	336	494
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
	yes	yes
11. Were customers provided with information		

12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
--	-----	-----

b. Describe how your agency tracks this information.
Santa Clara Valley Water District performs and tracks surveys.

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
<p>a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."</p>	

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes

3. Estimated percent of single-family households with low-flow showerheads: 75%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: 50%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

Totals from 1991/1992 CUWCC annual report indicate over 11,000 water conservation kits were delivered.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

a. If YES, when did your agency begin implementing this strategy? 1/22/1992

b. Describe your targeting/ marketing strategy.

Low flow devices are offered to customers through advertising conservation methods. Devices are distributed during water surveys.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
---	-------------	----------

2. Number of low-flow showerheads distributed:	67	171
--	----	-----

3. Number of toilet-displacement devices distributed:	0	0
---	---	---

4. Number of toilet flappers distributed:	0	0
---	---	---

5. Number of faucet aerators distributed:	158	374
---	-----	-----

6. Does your agency track the distribution and cost of low-flow devices? yes

a. If YES, in what format are low-flow devices tracked? Spreadsheet

b. If yes, describe your tracking and distribution system :
Distribution is tracked by the Santa Clara Valley Water District.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 13903
 - b. Determine other system verifiable uses (AF) 26
 - c. Determine total supply into the system (AF) 14586
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.95
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:
Customer leak notification system done.

B. Survey Data

1. Total number of miles of distribution system line. 165
2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

- | | |
|---|-----------|
| 1. Does your agency require meters for all new connections and bill by volume-of-use? | yes |
| 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? | yes |
| a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? | 1/22/1992 |
| b. Describe the program:
Meters required by City ordinance dated 10/29/1962 | |
| 3. Number of previously unmetered accounts fitted with meters during report year. | 0 |

B. Feasibility Study

- | | |
|--|------|
| 1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | no |
| a. If YES, when was the feasibility study conducted?
(mm/dd/yy) | |
| b. Describe the feasibility study: | |
| 2. Number of CII accounts with mixed-use meters. | 1000 |
| 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. | 0 |

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | No |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**City of Mountain
View**

BMP Form Status:
100% Complete

Year:
2001

A. Water Use Budgets

- | | |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 738 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|--|-----------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 1/22/1992 |
| b. Description of marketing / targeting strategy:
Target letters and advertisements on Web sites, and Consumer Confidence Report to all customers. Santa Clara Valley Water District contractor performs landscape surveys. | |
| 2. Number of Surveys Offered. | 220 |
| 3. Number of Surveys Completed. | 11 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets? no

2. Number of CII mixed-use accounts with landscape budgets. 0

3. Do you offer landscape irrigation training? no

4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:
Water efficient Landscape Guidelines provided.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	13000	7000
2. Actual Expenditures	13000	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.
Santa Clara Valley Water District and Pacific Gas & Electric.
2. Does your agency offer rebates for high-efficiency washers? yes
3. What is the level of the rebate? 100
4. Number of rebates awarded. 130

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 07: Public Information Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Target letters to high water users and information on City web site.

Consumer Confidence Report to all customers with water conservation programs.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	no	
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	
f. Special Events, Media Events	no	
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 08: School Education Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no			
Grades 4th-6th	no			
Grades 7th-8th	no			
High School	no			

3. Did your Agency's materials meet state education framework requirements? no

4. When did your Agency begin implementing this program?

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Santa Clara Valley Water District is water conservation partner and offers school education programs and materials in the Mountain View area.

D. Comments

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|-----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | yes |
|---|-----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Santa Clara Valley Water District will initiate CII survey program. The City of Mountain View will participate.

D. Comments

BMP 09a: CII ULFT Water Savings

Reporting Unit:
City of Mountain View

BMP Form
Status:
100% Complete

Year:
2001

1. Did your agency implement a CII ULFT replacement program in the reporting year? No
If No, please explain why on Line B. 10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program?
Check all that apply.
- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.
2. How does your agency advertise this program? Check all that apply.
- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) no
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? Yes
3. What is the total number of customer accounts participating in the program during the last year ? 0

**CII
Subsector**

Number of Toilets Replaced

4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Govern- ment	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

CITY OF MOUNTAIN VIEW PARTNERS WITH SANTA CLARA VALLEY WATER DISTRICT WATER CONSERVATION PROGRAMS. WE HAVE NOT PARTICIPATED IN THIS PROGRAM YET.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form	
City of Mountain View	Status:	Year:
	100%	2001
	Complete	

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$4334774
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$5858500
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$3100601
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$2399602
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$1410154
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Clara Valley Water District
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 10%
 - b. Coordinator's Name Steve Haren
 - c. Coordinator's Title Water Meter Supervisor
 - d. Coordinator's Experience and Number of Years Water Utilities 16 years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/22/1992
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2001

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

WATER WASTE PROHIBITIONS, REQUIRES HOSE SHUT OFFS, RESTUARANT WATER ON REQUEST, REQUIRES DEFECTIVE PLUMBING REPAIRS, PROHIBITS SINGLE PASS COOLING SYSTEMS,

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

N/A

N/A

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding yes

b. Single-pass cooling systems for new connections yes

c. Non-recirculating systems in all new conveyor or car wash systems no

d. Non-recirculating systems in all new commercial laundry systems no

e. Non-recirculating systems in all new decorative fountains no

f. Other, please name

RESTUARANT WATER UPON REQUEST, REQUIRES HOSE SHUTOFFS, REPAIRS ON DEFECTIVE PLUMBING yes

2. Describe measures that prohibit water uses listed above:

ORDINANCE ENFORCEMENT WHEN NOTED OR REPORTED, PLAN REVIEWS

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | no |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | yes |

4. Does your agency include water softener checks in home water audit programs?	yes
---	-----

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no
---	----

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form	
City of Mountain View	Status:	Year:
	100%	2001
	Complete	

A. Implementation

	Single-Family Accounts	Multi- Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	319
4. CBO Distribution	4	0
5. Other	0	0
Total	4	319

6. Describe your agency's ULFT program for single-family residences.
SANTA CLARA VALLEY WATER DISTRICT OPERATED THE SF DISTRIBUTION PROGRAM.

7. Describe your agency's ULFT program for multi-family residences.
SANTA CLARA VALLEY WATER DISTRICT OPERATED THE MF INSTALLATION PROGRAM.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

N/A

N/A

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2002

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 01/22/1992, your Agency STRATEGY DUE DATE is: | 01/21/1994 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 1/22/1992 |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 7/1/1998 |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	12754	815
2. Number of surveys completed:	155	985
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary	yes	yes

Outdoor Survey:

6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	spreadsheet	
b. Describe how your agency tracks this information.	Santa Clara Valley Water District tracks and performs surveys	

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes

3. Estimated percent of single-family households with low-flow showerheads: 75%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: 50%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

Totals from 1991/1992 CUWCC annual report indicate over 11,000 water conservation kits were delivered.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

a. If YES, when did your agency begin implementing this strategy? 1/22/1992

b. Describe your targeting/ marketing strategy.

Low flow devices are offered to customers through advertising conservation methods. Devices are distributed during water surveys.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	148	537
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	319	942

6. Does your agency track the distribution and cost of low-flow devices? yes

a. If YES, in what format are low-flow devices tracked? Spreadsheet

b. If yes, describe your tracking and distribution system :
Distribution is tracked by the Santa Clara Valley Water District.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 13554
 - b. Determine other system verifiable uses (AF) 23
 - c. Determine total supply into the system (AF) 14370
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.94
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:
Customer leak notification system done by meter readers.

B. Survey Data

1. Total number of miles of distribution system line. 165
2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2002

A. Implementation

- | | |
|---|-----------|
| 1. Does your agency require meters for all new connections and bill by volume-of-use? | yes |
| 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? | yes |
| a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? | 1/22/1992 |
| b. Describe the program:
Meters required by City ordinance dated 10/29/1962 | |
| 3. Number of previously unmetered accounts fitted with meters during report year. | 0 |

B. Feasibility Study

- | | |
|--|------|
| 1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | no |
| a. If YES, when was the feasibility study conducted?
(mm/dd/yy) | |
| b. Describe the feasibility study: | |
| 2. Number of CII accounts with mixed-use meters. | 1000 |
| 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. | 2 |

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | No |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**City of Mountain
View**

BMP Form Status:
100% Complete

Year:
2002

A. Water Use Budgets

- | | |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 750 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|--|-----------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 1/22/1992 |
| b. Description of marketing / targeting strategy:
Target letters and advertisements on web sites, send Consumer Confidence Report to all customers. Santa Clara Valley Water District contractor performs landscape surveys | |
| 2. Number of Surveys Offered. | 750 |
| 3. Number of Surveys Completed. | 7 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets? no
2. Number of CII mixed-use accounts with landscape budgets. 0
3. Do you offer landscape irrigation training? no
4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? No

a. If YES, describe below:

6. Do you have irrigated landscaping at your facilities? yes
 - a. If yes, is it water-efficient? yes
 - b. If yes, does it have dedicated irrigation metering? yes
7. Do you provide customer notices at the start of the irrigation season? no
8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2002

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.
Santa Clara Valley Water District and Pacific Gas and Electric
2. Does your agency offer rebates for high-efficiency washers? yes
3. What is the level of the rebate? 150
4. Number of rebates awarded. 285

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 07: Public Information Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Target letters to high water users and information on City Website.

Consumer Confidence Report to all customers includes water conservation information and programs

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	no	
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	
f. Special Events, Media Events	no	
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 08: School Education Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	0	0	0
Grades 4th-6th	yes	0	0	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 1/22/1992

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Santa Clara Valley Water District is water conservation partner and offers school education programs and materials in the Mountain View area.

D. Comments

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|-----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | yes |
|---|-----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Santa Clara Valley Water District is partner in Commercial Clothes Washer Rebate Program. 122 commercial clothes washers were replaced.

BMP 09a: CII ULFT Water Savings

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10.

Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

Service area zones
CII Sector or subsector

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

2. How does your agency advertise this program? Check all that apply.

Direct letter
Web page
Trade publications
Trade shows and events

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley water District

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?
3. What is the total number of customer accounts participating in the program during the last year ?

no

Yes

5

CII Subsector

Number of Toilets Replaced

4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	5	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Government	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

Direct installation

6. Does your agency use outside services to implement this program?

Yes

a. If yes, check all that apply.

Plumbing contractors/subcontracts

7. Participant tracking and follow-up.

No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	1
b. Inadequate payback	1
c. Inadequate ULFT performance	1
d. Lack of funding	1
e. American's with Disabilities Act	1
f. Permitting	1
g. Other. Please describe in B. 9.	1

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

Refer to Santa Clara Valley Water District

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and

budgeting?

Santa Clara Valley Water District operates program.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	900
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	900

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form	
City of Mountain View	Status:	Year:
	100%	2002
	Complete	

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$4482658
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$6129387
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$3101275
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$2474154
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$1483388
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Clara Valley Water District
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 10%
 - b. Coordinator's Name Steve Haren
 - c. Coordinator's Title Water Meter Supervisor
 - d. Coordinator's Experience and Number of Years Water Utilities 17 years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/22/1992
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2002

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Water waste prohibitions, require hose shut offs, restaurant water on request, requires defective plumbing repairs, prohibits single pass cooling systems.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

NA

NA

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding yes

b. Single-pass cooling systems for new connections yes

c. Non-recirculating systems in all new conveyor or car wash systems no

d. Non-recirculating systems in all new commercial laundry systems no

e. Non-recirculating systems in all new decorative fountains no

f. Other, please name

Restaurant water upon request, requires hose shut offs, repairs on defective plumbing yes

2. Describe measures that prohibit water uses listed above:

Ordinance enforcement when noted or reported, plan reviews.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | yes |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | yes |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | yes |
| 4. Does your agency include water softener checks in home water audit programs? | yes |
| 5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? | no |

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form	Year:
City of Mountain View	Status:	2002
	100%	
	Complete	

A. Implementation

	Single-Family Accounts	Multi- Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	605
4. CBO Distribution	238	0
5. Other	0	0
Total	238	605

6. Describe your agency's ULFT program for single-family residences.
Santa Clara Valley Water District operates the CPP single family distribution program.

7. Describe your agency's ULFT program for multi-family residences.
Santa Clara Valley Water District operates the multi family installation program.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

NA

NA

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2003

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 01/22/1992, your Agency STRATEGY DUE DATE is: | 01/21/1994 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 01/22/1992 |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 07/01/1998 |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	11024	2360
2. Number of surveys completed:	181	264

Indoor Survey:

- | | | |
|---|-----|-----|
| 3. Check for leaks, including toilets, faucets and meter checks | yes | yes |
| 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary | yes | yes |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary | yes | yes |

Outdoor Survey:

6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	
b. Describe how your agency tracks this information.	Santa Clara Valley Water District tracks and performs surveys	

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

BMP02: Residential Plumbing Retrofit

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes

3. Estimated percent of single-family households with low-flow showerheads: 75%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: 50%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

Totals from 1991/1992 CUWCC annual report indicate over 11,000 water conservation kits were delivered.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

a. If YES, when did your agency begin implementing this strategy? 01/22/1992

b. Describe your targeting/ marketing strategy.

Low flow devices are offered to customers through advertising conservation methods. Devices are distributed during water surveys.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	75	56
3. Number of toilet-displacement devices distributed:	10	10
4. Number of toilet flappers distributed:	25	2
5. Number of faucet aerators distributed:	219	146

6. Does your agency track the distribution and cost of low-flow devices? yes

a. If YES, in what format are low-flow devices tracked? Spreadsheet

b. If yes, describe your tracking and distribution system :
Tracked and distributed by Santa Clara Valley Water District.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2003

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 12822
 - b. Determine other system verifiable uses (AF) 22
 - c. Determine total supply into the system (AF) 13650
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.94
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:
Customer leak notification system done by meter readers.

B. Survey Data

1. Total number of miles of distribution system line. 165
2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? yes
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? 1/22/1992
 - b. Describe the program:
Meters required by City ordinance 10/29/1962
3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted? 0 (mm/dd/yy)
 - b. Describe the feasibility study:
2. Number of CII accounts with mixed-use meters. 700
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**City of Mountain
View**

BMP Form Status:
100% Complete

Year:
2003

A. Water Use Budgets

- | | |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 778 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|---|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 01/22/1992 |
| b. Description of marketing / targeting strategy:
Target letters and advertisements on web site, consumer confidence report to all customers. Santa Clara Valley Water District contractor performs landscape surveys. | |
| 2. Number of Surveys Offered. | 778 |
| 3. Number of Surveys Completed. | 10 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. no

Does your agency provide mixed-use accounts with landscape budgets?

2. Number of CII mixed-use accounts with landscape budgets. 0

3. Do you offer landscape irrigation training? no

4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? No

a. If YES, describe below:

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
City of Mountain View	100% Complete	2003

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes
 - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.
Santa Clara Valley Water District and PGE
2. Does your agency offer rebates for high-efficiency washers? no
3. What is the level of the rebate? 150
4. Number of rebates awarded. 345

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 07: Public Information Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Target letters to high water users, provide information on city web site.

Consumer confidence report to all customers includes water conservation program information.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	0
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	0
f. Special Events, Media Events	no	0
g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 08: School Education Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	0	0	0
Grades 4th-6th	yes	0	0	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/22/1992

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Santa Clara Valley Water District partners with us in water conservation and they offer school education programs and materials in our service area.

D. Comments

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|-----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | yes |
|---|-----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	1	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Santa Clara Valley Water District is partner in Commercial Clothier Washer rebate Program. 21 washers were replaced.

BMP 09a: CII ULFT Water Savings

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10.

Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

Service area zones
CII Sector or subsector

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

2. How does your agency advertise this program? Check all that apply.

Direct letter
Web page
Newspapers
Trade publications
Trade shows and events

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley water District

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?
3. What is the total number of customer accounts participating in the program during the last year ?

no

Yes

1

CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
4.				
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Government	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

Direct installation

6. Does your agency use outside services to implement this program?

Yes

a. If yes, check all that apply.

Plumbing contractors/subcontracts

7. Participant tracking and follow-up.

No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- | | |
|-------------------------------------|---|
| a. Disruption to business | 1 |
| b. Inadequate payback | 1 |
| c. Inadequate ULFT performance | 1 |
| d. Lack of funding | 1 |
| e. American's with Disabilities Act | 1 |
| f. Permitting | 1 |
| g. Other. Please describe in B. 9. | 1 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

Refer to Santa Clara Valley Water District

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Santa Clara Valley Ware District operates program.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	2700
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	2700

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:
City of Mountain View

BMP Form
Status:
100% Complete

Year:
2003

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$6802225
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$6410909

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$4240712
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$185225

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$1768058
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$80595

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$2531600
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$307487

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$52990
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$14845

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:
City of Mountain View

BMP Form
Status:
100% Complete

Year:
2003

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$6802225
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$6410909

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$4240712
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$185225

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$1768058
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$80595

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$2531600
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$307487

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$52990
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$14845

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Clara Valley Water District
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 10%
 - b. Coordinator's Name Steve Haren
 - c. Coordinator's Title Water Meter Supervisor
 - d. Coordinator's Experience and Number of Years Water Utilities 18 years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/22/1992
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Water waste prohibitions require hose shut offs, restaurant water upon request, requires defective plumbing repairs, and prohibits single pass cooling systems.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

N/A

N/A

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding yes

b. Single-pass cooling systems for new connections yes

c. Non-recirculating systems in all new conveyor or car wash systems no

d. Non-recirculating systems in all new commercial laundry systems no

e. Non-recirculating systems in all new decorative fountains no

f. Other, please name

Restaurant water upon request, hose shut-offs, repairs on defective plumbing yes

2. Describe measures that prohibit water uses listed above:

Ordinance enforcement when noted or reported, plan reviews.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | yes |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | yes |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | yes |

4. Does your agency include water softener checks in home water audit programs?	yes
---	-----

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no
---	----

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2003

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	418
5. Other	0	0
Total	0	418

6. Describe your agency's ULFT program for single-family residences.
Santa Clara valley Water District operates this program.

7. Describe your agency's ULFT program for multi-family residences.
Santa Clara Valley water District operates this program.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

N/A

N/A

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 01/22/1992, your Agency STRATEGY DUE DATE is: | 01/21/1994 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 01/22/1992 |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 07/01/1998 |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	11081	2503
2. Number of surveys completed:	83	488

Indoor Survey:

- | | | |
|---|-----|-----|
| 3. Check for leaks, including toilets, faucets and meter checks | yes | yes |
| 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary | yes | yes |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary | yes | yes |

Outdoor Survey:

6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	
b. Describe how your agency tracks this information.	Santa Clara Valley Water District tracks and performs surveys.	

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Santa Clara Valley Water District operates programs.

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes

3. Estimated percent of single-family households with low-flow showerheads: 75%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no

5. Estimated percent of multi-family households with low-flow showerheads: 50%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

Totals from 1991/1992 CUWCC annual report indicate over 11,000 water conservation kits were delivered.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes

a. If YES, when did your agency begin implementing this strategy? 01/22/1992

b. Describe your targeting/ marketing strategy.

Low flow devices are offered to customers through advertising conservation methods. Devices are distributed during water surveys.

Low-Flow Devices Distributed/ Installed

SF Accounts

MF Units

2. Number of low-flow showerheads distributed: 17 88

3. Number of toilet-displacement devices distributed: 0 0

4. Number of toilet flappers distributed: 10 8

5. Number of faucet aerators distributed: 62 272

6. Does your agency track the distribution and cost of low-flow devices? yes

a. If YES, in what format are low-flow devices tracked? Spreadsheet

b. If yes, describe your tracking and distribution system :
Tracked and distributed by Santa Clara Valley Water District.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

No

 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Santa Clara Valley Water District operates programs.

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 13071
 - b. Determine other system verifiable uses (AF) 75
 - c. Determine total supply into the system (AF) 13982
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.94
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? yes
 - a. If yes, describe the leak detection program:
Customer leak notification system done by meter readers.

B. Survey Data

1. Total number of miles of distribution system line. 165
2. Number of miles of distribution system line surveyed. 0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? yes
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? 1/22/1992
 - b. Describe the program:
Meters required by City ordinance 10/29/1962
3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted? 0 (mm/dd/yy)
 - b. Describe the feasibility study:
2. Number of CII accounts with mixed-use meters. 700
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**City of Mountain
View**

BMP Form Status:
100% Complete

Year:
2004

A. Water Use Budgets

- | | |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 877 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|---|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 01/22/1992 |
| b. Description of marketing / targeting strategy:
Target letters and advertisements on web site, Consumer Confidence Report to all customers. Santa Clara Valley Water District contractor performs landscape surveys. | |
| 2. Number of Surveys Offered. | 877 |
| 3. Number of Surveys Completed. | 13 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program.
Does your agency provide mixed-use accounts with landscape budgets? no
2. Number of CII mixed-use accounts with landscape budgets. 0
3. Do you offer landscape irrigation training? no
4. Does your agency offer financial incentives to improve landscape water use efficiency? no

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? No

a. If YES, describe below:

6. Do you have irrigated landscaping at your facilities? yes
 - a. If yes, is it water-efficient? yes
 - b. If yes, does it have dedicated irrigation metering? yes
7. Do you provide customer notices at the start of the irrigation season? no
8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Santa Clara Valley Water District operates program.

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: City of Mountain View	BMP Form Status: 100% Complete	Year: 2004
---	--	----------------------

A. Implementation

- | | |
|--|-----|
| 1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? | yes |
| a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.
Santa Clara Valley Water District and PGE | |
| 2. Does your agency offer rebates for high-efficiency washers? | yes |
| 3. What is the level of the rebate? | 150 |
| 4. Number of rebates awarded. | 293 |

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

D. Comments

Santa Clara Valley Water District operates program.

BMP 07: Public Information Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.
Target letters to high water users, provide information on city web site. Consumer Confidence Report to all customers includes water conservation program information. Water Conservation phone number listed.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	0
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	0
f. Special Events, Media Events	no	0
g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Santa Clara Valley Water District advertises water conservation programs.

BMP 08: School Education Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	0	0	0
Grades 4th-6th	yes	0	0	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/22/1992

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Santa Clara Valley Water District partners with us in water conservation and they offer school education programs and materials in our service area.

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|-----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | yes |
|---|-----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	1484	641	0
b. Number of New Surveys Completed	1	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	275	17	4675
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Santa Clara Valley Water District offered Commercial Clothes Washer Rebate Program, 17 washers were replaced.

BMP 09a: CII ULFT Water Savings

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

1. Did your agency implement a CII ULFT replacement program in the reporting year?

Yes

If No, please explain why on Line B. 10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program?

Check all that apply.

Service area zones
CII Sector or subsector
CII ULFT Study subsector
targeting

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

2. How does your agency advertise this program? Check all that apply.

Direct letter
Web page
Newspapers
Trade publications
Trade shows and events

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

Yes

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

Yes

3. What is the total number of customer accounts participating in the program during the last year ?

49

CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
4.				
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Government	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

Direct distribution

6. Does your agency use outside services to implement this program? Yes

a. If yes, check all that apply.

Plumbing
contractors/subcontracts

7. Participant tracking and follow-up.

No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- | | |
|-------------------------------------|---|
| a. Disruption to business | 1 |
| b. Inadequate payback | 1 |
| c. Inadequate ULFT performance | 1 |
| d. Lack of funding | 1 |
| e. American's with Disabilities Act | 1 |
| f. Permitting | 1 |
| g. Other. Please describe in B. 9. | 1 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

Refer to Santa Clara Valley Water District

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Santa Clara Valley Water District operates program.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	22050
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	22050

D. Comments

Santa Clara Valley Water District operates program.

BMP 11: Conservation Pricing

Reporting Unit:
City of Mountain View

BMP Form
Status:
100% Complete

Year:
2004

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$7385176
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$6992003

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$4314884
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$463721

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$1676168
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$95379

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$3887284
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$189207

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$8465
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$6944

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
---	----

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Clara Valley Water District
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 10%
 - b. Coordinator's Name Steve Haren
 - c. Coordinator's Title Water Meter Supervisor
 - d. Coordinator's Experience and Number of Years Water Utilities-19 Years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/22/1992
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Water waste prohibitions require hose shut offs, restaurant water upon request, requires defective plumbing repairs, and prohibits single pass cooling systems.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

N/A

N/A

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding yes

b. Single-pass cooling systems for new connections yes

c. Non-recirculating systems in all new conveyor or car wash systems no

d. Non-recirculating systems in all new commercial laundry systems no

e. Non-recirculating systems in all new decorative fountains no

f. Other, please name

Restaurant water upon request, hose shut-offs, repairs on defective plumbing yes

2. Describe measures that prohibit water uses listed above:

Ordinance enforcement when noted or reported, plan reviews.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | yes |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | yes |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | yes |

4. Does your agency include water softener checks in home water audit programs?	yes
---	-----

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no
---	----

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2004

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	6	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	6	0

6. Describe your agency's ULFT program for single-family residences.
Santa Clara Valley Water District operates this program.

7. Describe your agency's ULFT program for multi-family residences.
Santa Clara Valley Water District operates this program.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

N/A

N/A

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Mountain View

BMP Form Status:
100% Complete

Year:
2005

A. Implementation

- | | |
|--|------------|
| 1. Based on your signed MOU date, 01/22/1992, your Agency STRATEGY DUE DATE is: | 01/21/1994 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 01/22/1992 |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? | yes |
| a. If YES, when was it implemented? | 07/01/1998 |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	6091	1202
2. Number of surveys completed:	41	236

Indoor Survey:

- | | | |
|---|-----|-----|
| 3. Check for leaks, including toilets, faucets and meter checks | yes | yes |
| 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary | yes | yes |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary | yes | yes |

Outdoor Survey:

6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	
b. Describe how your agency tracks this information.	Santa Clara Valley Water District tracks and performs surveys.	

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

E. Comments

Santa Clara Valley Water District operates programs.

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no
 - a. If YES, list local jurisdictions in your service area and code or ordinance in each:
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes
3. Estimated percent of single-family households with low-flow showerheads: 75%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: 50%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.
Totals from 1991/1992 CUWCC annual report indicate over 11,000 water conservation kits were delivered.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes
 - a. If YES, when did your agency begin implementing this strategy? 01/22/1992
 - b. Describe your targeting/ marketing strategy.
Low flow devices are offered to customers through advertising conservation methods. Devices are distributed during water surveys.

Low-Flow Devices Distributed/ Installed

SF Accounts

MF Units

2. Number of low-flow showerheads distributed: 111 39
3. Number of toilet-displacement devices distributed: 0 0
4. Number of toilet flappers distributed: 0 0
5. Number of faucet aerators distributed: 0 0
6. Does your agency track the distribution and cost of low-flow devices? yes
 - a. If YES, in what format are low-flow devices tracked? Spreadsheet
 - b. If yes, describe your tracking and distribution system :

Tracked and distributed by Santa Clara Valley Water District.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Santa Clara Valley Water District operates programs.

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

- | | |
|--|------|
| 1. Has your agency completed a pre-screening system audit for this reporting year? | yes |
| 2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production: | |
| a. Determine metered sales (AF) | 6991 |
| b. Determine other system verifiable uses (AF) | 37 |
| c. Determine total supply into the system (AF) | 6991 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 0.94 |
| 3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? | yes |
| 4. Did your agency complete a full-scale audit during this report year? | no |
| 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? | no |
| 6. Does your agency operate a system leak detection program? | yes |
| a. If yes, describe the leak detection program:
Customer leak notification system done by meter readers. | |

B. Survey Data

- | | |
|--|-----|
| 1. Total number of miles of distribution system line. | 165 |
| 2. Number of miles of distribution system line surveyed. | 0 |

C. System Audit / Leak Detection Program Expenditures

- | | This Year | Next Year |
|--------------------------|------------------|------------------|
| 1. Budgeted Expenditures | 0 | 0 |
| 2. Actual Expenditures | 0 | |

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | No |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? yes
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? 1/22/1992
 - b. Describe the program:
Meters required by City ordinance 10/29/1962
3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted? 0 (mm/dd/yy)
 - b. Describe the feasibility study:
2. Number of CII accounts with mixed-use meters. 700
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**City of Mountain
View**

BMP Form Status:
100% Complete

Year:
2005

A. Water Use Budgets

- | | |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts: | 877 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 0 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 0 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | no |

B. Landscape Surveys

- | | |
|---|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 01/22/1992 |
| b. Description of marketing / targeting strategy:
Target letters and advertisements on web site, Consumer Confidence Report to all customers. Santa Clara Valley Water District contractor performs landscape surveys. | |
| 2. Number of Surveys Offered. | 131 |
| 3. Number of Surveys Completed. | 3 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |
| a. Irrigation System Check | yes |
| b. Distribution Uniformity Analysis | yes |
| c. Review / Develop Irrigation Schedules | yes |
| d. Measure Landscape Area | yes |
| e. Measure Total Irrigable Area | yes |
| f. Provide Customer Report / Information | yes |
| 5. Do you track survey offers and results? | yes |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

- | | |
|---|----|
| 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. | no |
| Does your agency provide mixed-use accounts with landscape budgets? | |
| 2. Number of CII mixed-use accounts with landscape budgets. | 0 |
| 3. Do you offer landscape irrigation training? | no |
| 4. Does your agency offer financial incentives to improve landscape water use efficiency? | no |

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

- | | |
|--|----|
| 5. Do you provide landscape water use efficiency information to new customers and customers changing services? | No |
|--|----|

a. If YES, describe below:

- | | |
|---|-----|
| 6. Do you have irrigated landscaping at your facilities? | yes |
| a. If yes, is it water-efficient? | yes |
| b. If yes, does it have dedicated irrigation metering? | yes |
| 7. Do you provide customer notices at the start of the irrigation season? | no |
| 8. Do you provide customer notices at the end of the irrigation season? | no |

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

E. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | No |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

F. Comments

Santa Clara Valley Water District operates program.

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: City of Mountain View	BMP Form Status: 100% Complete	Year: 2005
---	--	----------------------

A. Implementation

- | | |
|--|-----|
| 1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? | yes |
| a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.
Santa Clara Valley Water District and PGE | |
| 2. Does your agency offer rebates for high-efficiency washers? | yes |
| 3. What is the level of the rebate? | 150 |
| 4. Number of rebates awarded. | 170 |

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

D. Comments

Santa Clara Valley Water District operates program.

BMP 07: Public Information Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

Target letters to high water users, provide information on city web site. Consumer Confidence Report to all customers includes water conservation program information. Water Conservation phone number listed.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	0
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	no	0
f. Special Events, Media Events	no	0
g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Santa Clara Valley Water District advertises water conservation programs.

BMP 08: School Education Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	0	0	0
Grades 4th-6th	yes	0	0	0
Grades 7th-8th	yes	0	0	0
High School	yes	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/22/1992

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Santa Clara Valley Water District partners with us in water conservation and they offer school education programs and materials in our service area.

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|-----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | yes |
|---|-----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	742	320	0
b. Number of New Surveys Completed	1	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	275	8	2200
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

Santa Clara Valley Water District offered Commercial Clothes Washer Rebate Program, 17 washers were replaced.

BMP 09a: CII ULFT Water Savings

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10.

Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

Service area zones

CII Sector or subsector

CII ULFT Study subsector targeting

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

2. How does your agency advertise this program? Check all that apply.

Direct letter

Web page

Newspapers

Trade publications

Trade shows and events

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Refer to Santa Clara Valley Water District

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?
3. What is the total number of customer accounts participating in the program during the last year ?

Yes

Yes

49

CII Subsector	Number of Toilets Replaced			
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Government	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

Direct distribution

6. Does your agency use outside services to implement this program?

Yes

a. If yes, check all that apply.

Plumbing contractors/subcontracts

7. Participant tracking and follow-up.

No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- | | |
|-------------------------------------|---|
| a. Disruption to business | 1 |
| b. Inadequate payback | 1 |
| c. Inadequate ULFT performance | 1 |
| d. Lack of funding | 1 |
| e. American's with Disabilities Act | 1 |
| f. Permitting | 1 |
| g. Other. Please describe in B. 9. | 1 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

Refer to Santa Clara Valley Water District

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Santa Clara Valley Water District operates program.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	11609
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	11609

D. Comments

Santa Clara Valley Water District operates program.

BMP 11: Conservation Pricing

Reporting Unit:
City of Mountain View

BMP Form
Status:
100% Complete

Year:
2005

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Non-volumetric Flat Rate
c. Total Revenue from Volumetric Rates	\$3697588
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$3496001

2. Commercial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$2157442
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$231860

3. Industrial

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$838084
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$47689

4. Institutional / Government

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$1943642
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$94603

6. Other

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$4232
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$3742

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 12: Conservation Coordinator

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name: Santa Clara Valley Water District
5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 10%
 - b. Coordinator's Name Steve Haren
 - c. Coordinator's Title Water Meter Supervisor
 - d. Coordinator's Experience and Number of Years Water Utilities-20 Years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 1/22/1992
6. Number of conservation staff, including Conservation Coordinator. 2

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	7000	7000
2. Actual Expenditures	7000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 13: Water Waste Prohibition

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Water waste prohibitions require hose shut offs, restaurant water upon request, requires defective plumbing repairs, and prohibits single pass cooling systems.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

N/A

N/A

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

a. Gutter flooding yes

b. Single-pass cooling systems for new connections yes

c. Non-recirculating systems in all new conveyor or car wash systems no

d. Non-recirculating systems in all new commercial laundry systems no

e. Non-recirculating systems in all new decorative fountains no

f. Other, please name

Restaurant water upon request, hose shut-offs, repairs on defective plumbing yes

2. Describe measures that prohibit water uses listed above:

Ordinance enforcement when noted or reported, plan reviews.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

- | | |
|--|-----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models. | yes |
| b. Develop minimum appliance efficiency standards that: | |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. | yes |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. | yes |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | yes |

4. Does your agency include water softener checks in home water audit programs?	yes
---	-----

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no
---	----

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- | | |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | no |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." | |

E. Comments

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:

City of Mountain View

BMP Form Status:

100% Complete

Year:

2005

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	3	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	3	0

6. Describe your agency's ULFT program for single-family residences.

Santa Clara Valley Water District operates this program.

7. Describe your agency's ULFT program for multi-family residences.

Santa Clara Valley Water District operates this program.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

N/A

N/A

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

1. WATER SURVEY PROGRAMS FOR SINGLE-FAMILY RESIDENTIAL AND MULTI-FAMILY RESIDENTIAL CUSTOMERS

A. Implementation

Implementation shall consist of at least the following actions:

- a) Develop and implement a strategy targeting and marketing water use surveys to single-family residential and multi-family residential customers.
- b) Directly contact via letter or telephone not less than 20% of single-family residential customers and 20% of multi-family residential customers each reporting period.
- c) Surveys shall include indoor and outdoor components, and at minimum shall have the following elements:

Indoor

- i) Check for leaks, including toilets, faucets, and meter check
- ii) Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, as necessary
- iii) Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary

Outdoor

- iv) Check irrigation system and timers
- v) Review or develop customer irrigation schedule

Recommended but not required

- vi) Measure currently landscaped area
- vii) Measure total irrigable area
- d) Provide customer with evaluation results and water saving recommendations; leave information packet with customer.
- e) Track surveys offered, surveys completed, survey results, and survey costs.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the year following the year the agency signed or became subject to the MOU.
- c) Agencies shall develop and implement a strategy targeting and marketing water use surveys to single-family residential and multi-family residential customers by the end of the first reporting

period following the date implementation was to commence.

d) The coverage requirement for this BMP, as specified in Section C of this Exhibit, shall be realized within 10 years of the date implementation was to commence.

C. Coverage Requirements

a) Not less than 15% of single-family residential accounts to receive water use surveys within 10 years of the date implementation was to commence. For the purposes of calculating coverage, 15% of single-family residential accounts means the number of accounts equal to 15% of single-family accounts in 1997 or the year the agency signed the MOU, whichever is later.

b) Not less than 15% of multi-family residential units to receive water use surveys within 10 years of the date implementation was to commence. For the purposes of calculating coverage, 15% of multi-family residential units means the number of units equal to 15% of multi-family units in 1997 or the year the agency signed the MOU, whichever is later.

D. Requirements for Documenting BMP Implementation

a) Number of single-family residential accounts in service area.

b) Number of multi-family residential accounts in service area.

c) Number of single-family residential surveys offered during reporting period.

d) Number of single-family residential surveys completed during reporting period.

e) Number of multi-family residential surveys offered during reporting period.

f) Number of multi-family residential surveys completed during reporting period.

E. Criteria to Determine BMP Implementation Status

- a) Agency has developed and implemented a strategy targeting and marketing water use surveys to single-family residential and multi-family residential customers by the end of the first reporting period following the date implementation was to commence.
- b) Agency has directly contacted not less than 20% of single-family residential accounts and 20% of multi-family residential units during period being reported.
- c) Agency is on schedule to complete surveys for 15% of single-family residential accounts and 15% of multi-family units within 10 years of the date implementation was to commence. Agencies will receive credit against the coverage requirement for previously completed residential water use surveys according to the following schedule* :

	<u>% Credit</u>
Before 1990	0.0%
1990	12.5%
1991	25.0%
1992	37.5%
1993	50.0%
1994	62.5%
1995	75.0%
1996	87.5%
1997	100.0%

- d) Agencies will be considered on track if the percent of single-family accounts and the percent of multi-family accounts receiving water use surveys equals or exceeds the following: 1.5% by end of first reporting period following date implementation to commence; 3.6% by end of second reporting period; 6.3% by end of third reporting period; 9.6% by end of fourth reporting period; and 13.5% by end of fifth reporting period.

F. Water Savings Assumptions

	<u>Pre-1980 Construction</u>	<u>Post-1980 Construction</u>
Low-flow showerhead retrofit	7.2 gcd	2.9 gcd
Toilet retrofit (five year life)	1.3 gcd	0.0 gcd
Leak repair	0.5 gcd	0.5 gcd
Landscape survey (outdoor use reduction)	10%	10%

2. RESIDENTIAL PLUMBING RETROFIT

A. Implementation

Implementation shall consist of at least the following actions:

- a) Identify single-family and multi-family residences constructed prior to 1992. Develop a targeting and marketing strategy to distribute or directly install high-quality, low-flow showerheads (rated 2.5 gpm or less), toilet displacement devices (as needed), toilet flappers (as needed) and faucet aerators (rated 2.2 gpm or less) as practical to residences requiring them.
- b) Maintain distribution and/or direct installation programs so that devices are distributed to not less than 10% of single-family connections and multi-family units each reporting period, or require through enforceable ordinance the replacement of high-flow showerheads and other water using fixtures with their low-flow counterparts, until it can be demonstrated in accordance with Section E of this Exhibit that 75% of single-family residences and 75% of multi-family units are fitted with high-quality, low-flow showerheads.
- c) Track the type and number of retrofits completed, devices distributed, and program costs.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the year following the year the agency signed or became subject to the MOU.
- c) Agencies shall develop and implement a strategy targeting the distribution and/or installation of high-quality, low-flow plumbing devices to single-family residential and multi-family residential customers by the end of the first reporting period following the date implementation was to commence.
- d) An agency may elect to discontinue its device distribution programs without filing a formal budget or cost-effectiveness exemption when it can demonstrate that 75% of its single-family residences and 75% of its multi-family units constructed prior to 1992 are fitted with high-quality, low-flow showerheads.

C. Coverage Requirements

- a) Plumbing device distribution and installation programs to be maintained at a level sufficient to distribute high-quality, low-flow showerheads to not less than 10% of single-family residences and 10% of multi-family units constructed prior to 1992 each reporting period; or the enactment of an enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts.
- b) Plumbing device distribution and installation programs to be operated until it can be demonstrated in accordance with Section E of this Exhibit that 75% of single-family residences and 75% of multi-family units are fitted with high-quality, low-flow showerheads.

D. Requirements for Documenting BMP Implementation

- a) The target population of pre-1992 single-family residences and multi-family units to be provided showerheads and other water saving devices.
- b) The number of showerhead retrofit kits distributed during previous reporting period.
- c) The number of device retrofits completed during the previous reporting period.
- d) The estimated percentage of pre-1992 single-family residences and multi-family units in service area fitted with low-flow showerheads.

E. Criteria to Determine BMP Implementation Status

- a) Agency has developed and implemented a strategy targeting and marketing water use surveys to single-family residential and multi-family residential customers by the end of the first reporting period following the date implementation was to commence.
- b) Agency has tracked the type and number of retrofits completed, devices distributed, and program costs.
- c) Agency EITHER
 - i) has distributed or directly installed high-quality, low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family residences and 10% of multi-family units constructed prior to 1992 during the reporting period; and/or has enacted an ordinance requiring the replacement of high-flow shower-heads and other water use fixtures with their low-flow counterparts.
 - OR
 - ii) can demonstrate through customer surveys with 95% statistical confidence and a $\pm 10\%$ error that 75% of single-family residences and 75% of multi-family units constructed prior to 1992 are fitted with low-flow showerheads.

F. Water Savings Assumptions

	<u>Pre-1980 Construction</u>	<u>Post-1980 Construction</u>
Low-flow showerhead retrofit	7.2 gcd	2.9 gcd
Toilet retrofit (five year life)	1.3 gcd	0.0 gcd

3. SYSTEM WATER AUDITS, LEAK DETECTION AND REPAIR

A. Implementation

Implementation shall consist of at least the following actions:

- a) Annually complete a prescreening system audit to determine the need for a fullscale system audit. The prescreening system audit shall be calculated as follows:
 - i. Determine metered sales;
 - i. Determine other system verifiable uses;
 - ii. Determine total supply into the system;
 - iii. Divide metered sales plus other verifiable uses by total supply into the system. If this quantity is less than 0.9, a fullscale system audit is indicated.
- b) When indicated, agencies shall complete water audits of their distribution systems using methodology consistent with that described in AWWA's *Water Audit and Leak Detection Guidebook*.
- c) Agencies shall advise customers whenever it appears possible that leaks exist on the customer's side of the meter; perform distribution system leak detection when warranted and cost-effective; and repair leaks when found.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

- a) Agency shall maintain an active distribution system auditing program.
- b) Agency shall repair identified leaks whenever cost-effective.

D. Requirements for Documenting BMP Implementation

- a) Prescreening audit results and supporting documentation;
- b) Maintain in-house records of audit results or the completed AWWA Audit Worksheets for each completed audit period.

E. Criteria to Determine BMP Implementation Status

- a) Agency has annually completed a pre-screening distribution system audit.
- b) Agency has conducted a full system audit consistent with methods described by AWWA's *Manual of Water Supply Practices, Water Audits and Leak Detection* whenever indicated by a pre-screening audit.

F. Water Savings Assumptions

Unaccounted water losses assumed to be no more than 10% of total water into the water supplier's system.

4. METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

A. Implementation

Implementation shall consist of at least the following actions:

- a) Requiring meters for all new connections and billing by volume of use.
- b) Establishing a program for retrofitting existing unmetered connections and billing by volume of use.
- c) Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1999.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the second year following the year the agency signed or became subject to the MOU.
- c) A plan to retrofit and bill by volume of use existing unmetered connections to be completed by end of the first reporting period following the date implementation was to commence.
- d) A feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters to be completed by end of the first reporting period following the date implementation was to commence.

C. Coverage Requirements

100% of existing unmetered accounts to be metered and billed by volume of use within 10 years of date implementation was to commence.

D. Requirements for Documenting BMP Implementation

- a) Confirmation that all new connections are metered and are being billed by volume of use.
- b) Number of unmetered accounts in the service area. For the purposes of evaluation, this shall be defined as the baseline meter retrofit target, and shall be used to calculate the agency's minimum annual retrofit requirement.
- c) Number of unmetered connections retrofitted during the reporting period.
- d) Number of CII accounts with mixed-use meters.
- e) Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.

E. Criteria to Determine BMP Implementation Status

- a) Agency with existing unmetered connections has completed a meter retrofit plan by end of first reporting period following the date implementation was to commence.
- b) Agency has completed a feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters by end of first reporting period following the date implementation was to commence.
- c) Agency with existing unmetered connections is on track to meter these connections within 10 years of the date implementation was to commence. An agency will be considered on track if the percent of unmetered accounts retrofitted with meters equals or exceeds the following: 10% by end of first reporting period following date implementation to commence; 24% by end of second reporting period; 42% by end of third reporting period; 64% by end of fourth reporting period; and 90% by end of fifth reporting period.

F. Water Savings Assumptions

Assume meter retrofits will result in a 20% reduction in demand by retrofitted accounts.

5. LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES

A. Implementation

Implementation shall consist of at least the following actions:

Customer Support, Education and Assistance

- a) Agencies shall provide non-residential customers with support and incentives to improve their landscape water use efficiency. This support shall include, but not be limited to, the following:

Accounts with Dedicated Irrigation Meters

- a) Identify accounts with dedicated irrigation meters and assign ETo-based water use budgets equal to no more than 100% of reference evapotranspiration per square foot of landscape area in accordance with the schedule given in Section B of this Exhibit.
- b) Provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption in accordance with the schedule given in Section B of this Exhibit; agencies may choose not to notify customers whose use is less than their water use budget.

Commercial/Industrial/Institutional Accounts with Mixed-Use Meters or Not Metered

- a) Develop and implement a strategy targeting and marketing large landscape water use surveys to commercial/industrial/institutional (CII) accounts with mixed-use meters. Each reporting period, directly contact via letter or telephone not less than 20% of CII accounts with mixed-use meters and offer water use surveys. (Note: CII surveys that include both indoor and outdoor components can be credited against coverage requirements for both BMP 5 and BMP 9.)
- b) Unmetered service areas will actively market landscape surveys to existing accounts with large landscapes, or accounts with landscapes which have been determined by the purveyor not to be water efficient.

c) Offer the following measures when cost-effective:

- i) Landscape water use analysis/surveys
- ii) Voluntary water use budgets
- iii) Installation of dedicated landscape meters
- iv) Training (multi-lingual where appropriate) in landscape maintenance, irrigation system maintenance, and irrigation system design.
- v) Financial incentives to improve irrigation system efficiency such as loans, rebates, and grants for the purchase and/or installation of water efficient irrigation systems.
- vi) Follow-up water use analyses/surveys consisting of a letter, phone call, or site visit where appropriate.

d) Survey elements will include: measurement of landscape area; measurement of total irrigable area; irrigation system check, and distribution uniformity analysis; review or develop irrigation schedules, as appropriate; provision of a customer survey report and information packet.

e) Track survey offers, acceptance, findings, devices installed, savings potential, and survey cost.

New or Change of Service Accounts

Provide information on climate-appropriate landscape design, efficient irrigation equipment/management to new customers and change-of-service customer accounts.

Recommended

- a) Install climate appropriate water efficient landscaping at water agency facilities, and dual metering where appropriate.
- b) Provide customer notices prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary. Provide customer notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1999.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the second year following the year the agency signed or became subject to the MOU.
- c) Develop ETo-based water use budgets for all accounts with dedicated irrigation meters by the end of the second reporting period from the date implementation was to commence.
- d) Develop and implement a plan to target and market landscape water use surveys to CII accounts with mixed-use meters by the end of the first reporting period from the date implementation was to commence.
- e) Develop and implement a customer incentive program by the end of the first reporting period from the date implementation was to commence.

C. Coverage Requirements

- a) ETo-based water use budgets developed for 90% of CII accounts with dedicated irrigation meters by the end of the second reporting period from the date implementation was to commence.
- b) Not less than 20% of CII accounts with mixed-use meters contacted and offered landscape water use surveys each reporting period.
- c) Irrigation water use surveys completed for not less than 15% of CII accounts with mixed-use meters within 10 years of the date implementation was to commence. (Note: CII surveys that include both indoor and outdoor components can be credited against coverage requirements for both BMP 5 and BMP 9.) For the purposes of calculating coverage, 15% of CII accounts means the number of accounts equal to 15% of CII accounts with mixed-use meters in 1997 or the year the agency signed the MOU, whichever is later.

D. Requirements for Documenting BMP Implementation

Dedicated Landscape Irrigation Accounts

Agencies shall preserve water use records and budgets for customers with dedicated landscape irrigation accounts for a period of not less than two reporting periods. This information may be used by the Council to verify the agency's reporting on this BMP .

- a) Number of dedicated irrigation meter accounts.
- b) Number of dedicated irrigation meter accounts with water budgets.
- c) Aggregate water use for dedicated landscape accounts with budgets.
- d) Aggregate budgeted water use for dedicated landscape accounts with budgets.

Mixed Use Accounts

- a) Number of mixed use accounts.
- b) Number, type, and dollar value of incentives, rebates, and no, or low interest loans offered to, and received by, customers.
- c) Number of surveys offered.
- d) Number of surveys accepted.
- e) Estimated annual water savings by customers receiving surveys and implementing recommendations.

E. Criteria to Determine BMP Implementation Status

- a) Agency has developed water use budgets for 90% of accounts with dedicated irrigation meters by end of second reporting period from date implementation was to commence.
- b) Agency has implemented irrigation water use survey program for CII accounts with mixed-use meters, and directly contacts and offers surveys to not less than 20% of accounts each reporting period. (A program to retrofit mixed-use accounts with dedicated landscape meters and assigning water use budgets, or a program giving mixed-use accounts ETo-based budgets for irrigation uses satisfies this criterion.)
- c) Agency is on track to provide water use surveys to not less than 15% of CII accounts with mixed-use meters within 10 years of the date implementation was to commence. Agency may credit 100% of the number of landscape water use surveys for CII accounts with mixed-use meters completed prior to July 1, 1996, that have received a follow-up inspection against the coverage requirement; and 50% of surveys that have not received follow-up inspections. Agency may credit 100% of the number of landscape water use surveys completed for CII accounts with mixed-use meters after July 1, 1996 against the coverage requirement. (A program to retrofit mixed-use accounts with dedicated landscape accounts, or a program giving mixed-use accounts ETo-based budgets for irrigation uses satisfy this criterion.)

d) An agency will be considered on track if the percent of CII accounts with mixed-use meters receiving a landscape water use survey equals or exceeds the following: 1.5% by end of first reporting period following date implementation to commence; 3.6% by end of second reporting period; 6.3% by end of third reporting period; 9.6% by end of fourth reporting period; and 13.5% by end of fifth reporting period. (A program to retrofit mixed-use accounts with dedicated landscape accounts, or a program giving mixed-use accounts ETo-based budgets for irrigation uses satisfy this criterion.)

e) Agency has implemented and is maintaining customer incentive program(s) for irrigation equipment retrofits.

F. Water Savings Assumptions

Assume landscape surveys will result in a 15% reduction in demand for landscape uses by surveyed accounts.

6. HIGH-EFFICIENCY CLOTHES WASHING MACHINE FINANCIAL INCENTIVE PROGRAMS (Revised March 10, 2004)

A. Implementation

Implementation shall consist of at least the following actions:

1. Until January 1, 2007, the water agency shall offer a financial incentive, if cost effective, for the purchase of high-efficiency clothes washing machines (HEWS) meeting a water factor value of 9.5 or less.
2. Any financial incentive offered shall be not less than the marginal benefits of the water savings, reduced by the necessary expense of administering the incentive program. Incentive levels shall be calculated by using methods found in *A Guide to Customer Incentives for Water Conservation* prepared by Barakat and Chamberlain for the CUWA, CUWCC, and US EPA, February 1994. A water agency is not required to implement a financial incentive program if the maximum cost-effective financial incentive is less than \$50.

CUWCC shall begin to review this BMP before July 1, 2005. This review shall determine appropriate agency implementation activities after 2007. The purpose of this review is to revise this BMP to account for potential Federal and State standards, the market share of HEWs with various water factors, further advances in washer efficiency, funding partner activities, and consumer participation.

B. Implementation Schedule

1. For Agencies signing the MOU prior to July 1, 2003, implementation shall commence no later than July 1, 2004.
2. For Agencies signing the MOU or becoming subject to the MOU after July 1, 2003, implementation shall commence no later than July 1 of the second year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Overview

The objective of the Council is to transform the clothes washer market by increasing sales of HEWs. The Council anticipates this interim program will have a positive and long-lasting effect on the market share of HEWs; thus decreasing the future efforts needed by the Council and its members to achieve water efficiency in this sector.

The goal for this BMP is to at least triple the market share of HEWs purchased for use inside residential dwelling units, where no incentive program exists. For purposes of determining coverage requirements, the Council's estimates a non-incentive market share of HEWs at 12% of all clothes washing machine sales (derived from year 2000 Energy Star data). The coverage requirements are based upon the goal of increasing the market share of HEWs to thirty-six percent (36%) of all clothes washing machine sales.

Coverage Goal

The Council developed a Coverage Goal (CG) system to more easily determine coverage progress, and allow agencies to obtain additional credit for promoting the purchase of ultra high efficiency machines with water factor values of 8.5 or less. The CG is based on the total quantity of dwelling units (single-family and multi-family) in each agency's service territory. The Council chose to use the quantity of both single-family and multi-family dwelling units because US Census data on in-home clothes washing machines includes both types of dwelling units.

Agency determines its CG by the following calculation:

$$\text{CG} = \text{Total Dwelling Units} \times 80\% \times 6.67\% \times 12\% \times 3 \times 2.5$$

Where:

CG = Coverage Goal

Dwelling Units = total SF and MF dwelling units in agency service territory

80% = percentage of all dwelling units with in-home clothes washers

6.67% = percentage of washers requiring replacement each year

12% = Average HEW market share when no incentives exist

3 = tripling non-incentive market share

2.5 = years of program activity from July-2004 to January-2007

$$\text{Simplified Formula: CG} = \text{Total Dwelling Units} \times 0.048$$

Agencies may request an adjusted CG where US Census data or other statistically valid surveys prove that less than 80% of all dwelling units (single-family and multi-family) in their service territory include a clothes washing machine. Agencies signing the MOU after July 1, 2003, shall use a prorated CG based on implementation period of less than 2.5 years.

Coverage Points

Agency shall earn points towards its Coverage Goal for the purchase and installation of HEWs in its service territory where agency provides a financial incentive of \$25 or more per HEW. In efforts to transform the market place towards ultra-high efficiency washers, agency may earn additional points for HEWs with water factor values of 8.5 or less.

1. Agency shall earn 1 point for each HEW incentive issued on or after July 1, 2004, which results in the purchase and installation of a HEW with a water factor value greater than 8.5 but not exceeding 9.5.
2. Agency shall earn 2 points for each HEW incentive issued on or after July 1, 2004 resulting in the purchase and installation of a HEW with a water factor value greater than 6.0 but not exceeding 8.5.
3. Agency shall earn 3 points for each HEW incentive issued on or after July 1, 2004 resulting in the purchase and installation of a HEW with a water factor value of 6.0 or less.

Past Credit Points

Agency shall have the option to receive points towards its Coverage Goal for past efforts (efforts prior to July 1, 2004) by one of the following methods of agency's choosing:

1. Agencies shall earn points according to point scale described above in "Coverage Points; 1, 2 and 3" for each HEW incentive issued before July 1, 2004, resulting from agency incentive program, where agency has documentation of participation. Agency shall not receive any credit for HEWs with water factors greater than 9.5. Agencies shall not receive credit for any HEW sales or installations where the agency did not materially and substantially participate in the incentive program, and agency did not provide a financial incentive of \$25 or more.

OR

2. Agencies shall earn 1 point for each HEW incentive issued before July 1, 2004, resulting from agency incentive program, where agency has documentation of participation. Agencies shall not receive credit for any HEW sales or installations where the agency did not materially and substantially participate in the incentive program, and agency did not provide a financial incentive of \$25 or more.

D. Requirements for Documenting BMP Implementation

1. Agency shall provide documentation for all of the following items:

1.1 The quantity of single-family and multi-family dwelling units in the agency service area and the calculated Coverage Goal.

1.2 The quantity and value of financial incentives issued for HEWs with water factor values greater than 8.5, but not exceeding 9.5.

1.3 The quantity and value of financial incentives issued HEWs with water factor values greater than 6.0 but not exceeding 8.5.

1.4 The quantity and value of financial incentives issued for HEWs with water factors of 6.0 or less.

1.5 Average or estimated administration and overhead costs to operate the program.

1.6 To receive credit for past programs, agency shall provide: quantity and value of financial incentives, water factor values and date of incentives issued for high-efficiency clothes washers installed before July 1, 2004.

2. Agency shall retain records of each participant of the incentive program, including: name, address and telephone number of participant; water account number of building or dwelling unit; make and model of HEW purchased; water factor value; dollar amount of the agency's financial incentive; dollar amount of program partner's financial incentive (if applicable); and name of program partner(s).

E. Criteria to Determine BMP Implementation Status

Agency is offering a financial incentive to customers in its service territory for the purchase of high-efficiency clothes washing machines with water factors of 9.5 or less, and agency is meeting the coverage requirement as stated in this BMP.

Agency shall be considered on-track to meet its coverage requirements according to the following table:

Implementation Status Schedule	
Date	Percent of Points Earned Towards Coverage Goal
January 1, 2005	10%
July 1, 2005	30%
January 1, 2006	50%
July 1, 2006	75%
January 1, 2007	100%

Agencies signing the MOU after July 1, 2003, shall have a prorated Implementation Status Schedule, based on implementation period of less than 2.5 years.

F. Water Savings Assumptions

Gross water savings (gallons) from financial incentive programs that result in the purchase and installation of High Efficiency Washing Machines with water factors equal to or less than 9.5 shall be calculated using the following formula:

$$GWS = 14 \text{ yr.} \times \sum_i N_i \times (13.3 - i) \times 1,170 \frac{\text{gal.}}{\text{yr.}}$$

Where:

N_i is the number of machines replaced with water factor i
($i < 9.5$)

13.3 is the Baseline WF for washers sold in 1994, as supplied to DOE by the Association of Home Appliance Manufacturers (AHAM).

14 yr. is the assumed average useful life of residential washers. (Based on information from the Bern Kansas study)

1,170 gallons/year is the average change in water use for a unit change in water factor. This value was developed by the California Energy Commission.

Net water savings (gallons) from financial incentive programs shall be calculated using the following formula:

$$NWS = GWS \times (1 - FR),$$

where FR is the estimated rate of free ridership for the BMP 6 financial incentive program.

7. PUBLIC INFORMATION PROGRAMS

A. Implementation

Implementation shall consist of at least the following actions:

- a) Implement a public information program to promote water conservation and water conservation related benefits.
- b) Program should include, but is not limited to, providing speakers to employees, community groups and the media; using paid and public service advertising; using bill inserts; providing information on customers' bills showing use in gallons per day for the last billing period compared to the same period the year before; providing public information to promote water conservation practices; and coordinating with other government agencies, industry groups, public interest groups, and the media.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agencies shall maintain an active public information program to promote and educate customers about water conservation.

D. Requirements for Documenting BMP Implementation

- a) Number of public speaking events relating to conservation during reporting period.
- b) Number of media events relating to conservation during reporting period.
- c) Number of paid or public service announcements relating to conservation produced or sponsored during reporting period.
- d) Types of information relating to conservation provided to customers.
- e) Annual budget for public information programs directly related to conservation.

E. Criteria to Determine BMP Implementation Status

Agency has implemented and is maintaining a public information program consistent with BMP 7's definition.

F. Water Savings Assumptions

Not quantified.

8. SCHOOL EDUCATION PROGRAMS

A. Implementation

Implementation shall consist of at least the following actions:

- a) Implement a school education program to promote water conservation and water conservation related benefits.
- b) Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials shall meet the state education framework requirements, and grade appropriate materials shall be distributed to grade levels K-3, 4-6, 7-8, and high school.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agencies shall maintain an active school education program to educate students in the agency's service areas about water conservation and efficient water uses.

D. Requirements for Documenting BMP Implementation

- a) Number of school presentations made during reporting period.
- b) Number and type of curriculum materials developed and/or provided by water supplier, including confirmation that curriculum materials meet state education framework requirements and are grade-level appropriate.
- c) Number of students reached.
- d) Number of in-service presentations or teacher's workshops conducted during reporting period.
- e) Annual budget for school education programs related to conservation.

E. Criteria to Determine BMP Implementation Status

Agency has implemented and is maintaining a school education program consistent with BMP 8's definition.

F. Water Savings Assumptions

Not quantified.

9. CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII) ACCOUNTS

A. Implementation

Implementation shall consist of at least the following actions:

BOTH (a) AND (b)

(a) CII Accounts

Identify and rank commercial, industrial, and institutional (CII) accounts (or customers if the agency chooses to aggregate accounts) according to water use. For purposes of this BMP, CII accounts are defined as follows:

Commercial Accounts: any water use that provides or distributes a product or service, such as hotels, restaurants, office buildings, commercial businesses or other places of commerce. These do not include multi-family residences, agricultural users, or customers that fall within the industrial or institutional classifications.

Industrial Accounts: any water users that are primarily manufacturers or processors of materials as defined by the Standard Industrial Classifications (SIC) Code numbers 2000 through 3999.

Institutional Accounts: any water-using establishment dedicated to public service. This includes schools, courts, churches, hospitals, and government facilities. All facilities serving these functions are to be considered institutions regardless of ownership.

(b) 3-Year Interim CII ULFT Program

Implementation shall consist of at least the following actions:

i) A program to accelerate replacement of existing high-water-using toilets with ultra-low- flush (1.6 gallons or less) toilets in commercial, industrial, and institutional facilities.

ii) Programs shall be at least as effective as facilitating toilet replacements over a 3-year implementation period, commencing July 1, 2001, sufficient to produce cumulative water savings over 10 years equal to 3% of Total Water Savings Potential, as defined by Exhibit 8 of this MOU.

iii) Annual reporting to the Council of all available information described in Section D, subsection (b) of this BMP. The Council shall develop and provide agencies with a concise reporting form by March 31, 2001.

iv) By July 1, 2004, a committee selected by the Steering Committee shall complete for submittal to the Steering Committee a written evaluation of the interim program, including an assessment of program designs, obstacles to implementation, program costs, estimated water savings, and cost-effectiveness. By August 2004, the Steering Committee will reconvene to review the evaluation and recommend to the Plenary the next course of action on BMP 9 targets for CII toilet replacement programs.

AND EITHER (c) OR (d)

(c) CII Water-Use Survey and Customer Incentives Program

Implement a CII Water-Use Survey and Customer Incentives Program. Develop a customer targeting and marketing strategy to provide water use surveys and customer incentives to CII accounts such that 10% of each CII sector's accounts are surveyed within 10 years of the date implementation is to commence. Directly contact (via letter, telephone, or personal visit) and offer water use surveys and customer incentives to at least 10% of each CII sector on a repeating basis. Water use surveys must include a site visit, an evaluation of all water-using apparatus and processes, and a customer report identifying recommended efficiency measures, their expected payback period and available agency incentives. Within one year of a completed survey, follow-up via phone or site visit with customer regarding facility water use and water saving improvements. Track customer contacts, accounts (or customers) receiving surveys, follow-ups, and measures implemented. The method for crediting water use surveys completed prior to the revision of this BMP is described in Section E.

(d) CII Conservation Performance Targets

Achieve a water use reduction in the CII sectors equaling or exceeding the CII Conservation Performance Target. Implement programs to achieve annual water use savings by CII accounts by an amount equal to 10% of the baseline use of CII accounts in the agency's service area over a ten-year period. The target amount of annual water use reduction in CII accounts is a static value calculated from the baseline amount of annual use. Baseline use is defined as the use by CII accounts in 1997. Water purveyors may justify to the Council the use of an alternative baseline year.

B. Implementation Schedule

(a) For agencies signing the MOU prior to December 31, 1997, implementation other than CII ULFTs shall commence no later than July 1, 1999. Implementation of Section A (b) -- CII ULFTs -- shall commence July 1, 2001.

(b) For agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation other than the 3-Year Interim CII ULFT Program shall commence no later than July 1 of the second year following the year the agency signed or became subject to the MOU. Implementation of Section A (b) -- CII ULFTs -- shall commence July 1, 2001. Agencies signing the MOU or becoming subject to the MOU after July 1, 2001 shall not be subject to the Coverage Requirements set forth in Section C, subsection (a) - 3-Year Interim CII ULFT Program.

(c) The coverage requirement for this BMP, as specified in Section C of this Exhibit, with the exception of CII ULFTs, shall be realized within 10 years of the date implementation was to commence.

C. Coverage Requirements

(a) 3-Year CII ULFT Program

CII ULFT program water savings equal to 3% of Total Water Savings Potential, as defined by Exhibit 8 of this MOU, by July 1, 2004.

EITHER

(b) CII Water Use Survey and Customer Incentives Program

10% of each of the CII sector's accounts to accept a water use survey within 10 years of the date implementation is to commence. For the purposes of calculating coverage, 10% of CII accounts means the number of accounts equal to 10% of CII accounts in 1997 or the year the agency signed the MOU, whichever is later.

OR

(c) CII Conservation Performance Targets

Reduce annual water use by CII accounts by an amount equal to 10% of the annual baseline water use within 10 years of the date implementation is to commence, including savings resulting from implementation of section A (b) -- CII ULFTs.

D. Requirements for Documenting BMP Implementation

(a) CII Accounts

The number of accounts (or customers) and amount of water use within each of the CII sectors.

(b) 3-Year Interim CII ULFT Replacement Program

1) Customer participant information, including retail water utility account ID's, primary contact information, facility address, facility type, number of toilets being replaced, number of toilets in facility (if available), primary reasons for toilet replacement and program participation (if available).

2) Number of CII ULFTs replaced or distributed by CII sub sector by year.

3) Total program cost by year, including administration and overhead, labor (staff salaries and benefits), marketing, outside services, incentives, and implementation (agency installation, rebate, permitting and remedial costs), and any required evaluation and reporting by the Council. Costs for program development and program operation shall be reported separately.

4) Total program budget by year.

5) Program funding sources by year, including intra-agency funding mechanisms, inter-agency cost-sharing, and state/federal financial assistance sources.

6) Description of program design and implementation, such as types of

incentives, marketing, advertising methods and levels, customer targeting methods, customer contact methods, use of outside services (e.g., consultants or community-based organizations), and participant tracking and follow up.

7) Description of program acceptance or resistance by customers, any obstacles to implementation, and other issues affecting program implementation or effectiveness.

8) General assessment of program effectiveness.

AND EITHER (c) OR (d)

(c) CII Water Use Survey and Customer Incentives Program

1) The number of CII accounts (or customers) offered water use surveys during the reporting period.

2) The number of new water use surveys completed during the reporting period.

3) The number of follow-ups completed during the reporting period.

4) The type and number of water saving recommendations implemented.

5) Agency's program budget and actual program expenditures.

(d) CII Conservation Performance Target

The estimated reduction in annual water use for all CII accounts due to agency programs, interventions, and actions. Agencies must document how savings were realized and the method and calculations for estimating savings, including the savings resulting from agency-assisted CII ULFTs replacements under section A (b).

E. Criteria to Determine BMP Implementation Status

(a) CII Accounts

Agency has identified and ranked by water use its CII accounts.

(b) CII ULFTs

Agency is on schedule to meet the coverage requirement for section A (b) within 3 years of the start of implementation. An agency will be considered on track if by the end of the first year of implementation the 10-year cumulative water savings equals or exceeds 0.5% of Total Savings Potential; by the end of the second year of implementation the 10-year cumulative water savings equals 1.5% of Total Savings Potential; and by the end of the third year of implementation the 10-year cumulative water savings equals or exceeds 3.0% of Total Savings Potential.

During the 3-year interim implementation period, cumulative savings from CII ULFT replacement programs occurring prior to January 1, 2001, may not be applied towards the interim coverage requirement. However, cumulative savings from *all* previous agency CII ULFT replacement programs may be applied toward any long-term CII ULFT coverage requirement.

AND EITHER (c) OR (d) OR (e)

(c) CII Water Use Survey and Customer Incentives Program

1. Agency has developed and implemented a strategy targeting and marketing water use surveys to CII accounts (or customers) by the end of the first reporting period following the date implementation is to commence.
2. Agency is on schedule to complete surveys for 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of the date implementation is to commence. Agencies may credit 50% of the number of surveys completed prior to July 1, 1996 that have not received follow-up verification of implementation, and 100% of the number of surveys completed prior to July 1, 1996 that have received a follow-up survey. Agencies may credit 100% of the number of surveys completed after July 1, 1996 against the coverage requirement.
3. Agencies will be considered on track if the percent of CII accounts receiving a water use survey, in aggregate, equals or exceeds the following: 0.5% of the total number of surveys required by end of first reporting period following date implementation is to commence; 2.4% by end of second reporting period; 4.2% by end of third reporting period; 6.4% by end of fourth reporting period; and 9.0% by end of fifth reporting period.

(d) CII Conservation Performance Targets

1. Agency is on schedule to reduce water use by CII accounts by an amount equal to 10% of baseline use (as defined in Section A) for CII accounts within 10 years of the date implementation is to commence.
2. Agencies will be considered on track if estimated savings as a percent of baseline water use equals or exceeds the following: 0.5% by end of first reporting period following date implementation is to commence; 2.4% by end of second reporting period; 4.2% by end of third reporting period; 6.4% by end of fourth reporting period; and 9.0% by end of fifth reporting period.
3. Credited water savings must be realized through agency actions performed to increase water use efficiency within the CII sector. Agencies may credit 100% of estimated annual savings of interventions since 1991 that have been site verified, and 25% of estimated annual savings of interventions that have not been site verified.
4. Agencies may claim the estimated savings for regulations, ordinances, or laws intended to increase water use efficiency by the CII sector, subject to the review and approval of the savings estimates by the Council. To avoid double counting, agencies justifying savings on the basis of rate structure changes may not claim savings from any other actions undertaken by CII customers, third parties, or the agency.

(e) Combined Targets

Agencies may choose different tracks for different CII sectors, and will be considered in compliance with this BMP if they are on track to meet each applicable coverage requirement for each sector. In addition, agencies may implement both tracks for a given CII sector, and will be considered in compliance with this BMP if the percent of surveys completed and the percent of water savings realized, when added together, equals or exceeds the applicable compliance requirement. For example, at the end of the second reporting cycle an agency would be considered on track to meet the coverage requirement if the percent of surveys completed and the percent of water savings achieved, when added together, equaled or exceeded 2.4%. Agencies may combine tracks only if they make a convincing demonstration that savings attributable to counted surveys are not also included in their estimate of water savings for meeting the water savings performance track.

F. Water Savings Assumptions

Commercial water reduction results from Best Management Practices such as Interior and Landscape Water Surveys, Plumbing Codes, and Other Factors (Includes savings accounted for in other BMPs.) Estimated reduction in gallons per employee per day in year 2000 use occurring over the period 1980-2000: 12%.

Industrial water reduction results from Best Management Practices, Waste Discharge Fee, New Technology, Water Surveys, Plumbing Codes and Other Factors (Includes savings accounted for in other BMPs.) Estimated reduction in gallons per employee per day in year 2000 use occurring over the period 1980-2000: 15%.

11. CONSERVATION PRICING

A. Implementation

Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates); rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

c) Adoption of lifeline rates for low income customers will neither qualify nor disqualify a rate structure as meeting the requirements of this BMP.

CUWCC Rate Impact Study

Within one year of the adoption of this BMP revision, the Council shall undertake a study to determine the relative effect of conservation rate structure influence on landscape and indoor water use. The study shall develop sample areas that incorporate varying rate structure environments (e.g., low, uniform commodity rates; high uniform commodity rates; increasing block rates, etc.). As practical, the study shall utilize direct metering of customer end uses, and shall control for weather, climate, land use patterns, income, and other factors affecting water use patterns. If the study shows significant potential savings, as determined by a balanced committee of voting Council representatives, a revised pricing BMP containing numeric targets or other appropriate standards shall be developed for a Council vote.

B. Implementation Schedule

a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.

b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing.

D. Requirements for Documenting BMP Implementation

- a) Report annual revenue requirement by customer class for the reporting period.
- b) Report annual revenue derived from commodity charges by customer class for the reporting period.
- c) Report rate structure by customer class for water service and sewer service if provided.

E. Criteria to Determine BMP Implementation Status

Agency rate design shall be consistent with the BMP 11's definition of conservation pricing.

F. Water Savings Assumptions

Not quantified.

12. CONSERVATION COORDINATOR

A. Implementation

Implementation shall consist of at least the following actions:

a) Designation of a water conservation coordinator and support staff (if necessary), whose duties shall include the following:

i) Coordination and oversight of conservation programs and BMP implementation;

ii) Preparation and submittal of the Council BMP Implementation Report;

iii) Communication and promotion of water conservation issues to agency senior management; coordination of agency conservation programs with operations and planning staff; preparation of annual conservation budget; participation in the Council, including regular attendance at Council meetings; and preparation of the conservation elements of the agency's Urban Water Management Plan.

b) Agencies jointly operating regional conservation programs are not expected to staff duplicative and redundant conservation coordinator positions.

B. Implementation Schedule

a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.

b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

D. Requirements for Documenting BMP Implementation

a) Conservation Coordinator name, staff position, and years on job.

b) Date Conservation Coordinator position created by agency.

c) Number of Conservation Coordinator staff.

d) Duties of Conservation Coordinator and staff.

E. Criteria to Determine BMP Implementation Status

- a) Creating and staffing a Conservation Coordinator position within the agency organization.
- b) Providing the Conservation Coordinator with the necessary resources to implement cost-effective BMPs and prepare and submit Council BMP Implementation Reports.

F. Water Savings Assumptions

Not quantified.

13. WATER WASTE PROHIBITION

A. Implementation

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

Signatories shall also support efforts to develop state law regarding exchange-type water softeners that would: (1) allow the sale of only more efficient, demand-initiated regenerating (DIR) models; (2) develop minimum appliance efficiency standards that (a) increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used; and (b) implement an identified maximum number of gallons discharged per gallon of soft water produced; (3) allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the re-claimed water or groundwater supply.

Signatories shall also include water softener checks in home water audit programs and include information about DIR and exchange-type water softeners in their educational efforts to encourage replacement of less efficient timer models.

B. Implementation Schedule

a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.

b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agency shall adopt water waste prohibitions consistent with the provisions for this BMP specified in Section A of this Exhibit.

D. Requirements for Documenting BMP Implementation

Description of water waste prohibition ordinances enacted in service area.

E. Criteria to Determine BMP Implementation Status

Agency's water waste prohibition ordinances meet the requirements of the BMP definition.

F. Water Savings Assumptions

Not quantified.

14. RESIDENTIAL ULFT REPLACEMENT PROGRAMS

A. Implementation

Implementation shall consist of at least the following actions:

- a) Implementation of programs for replacing existing high-water-using toilets with ultra-low- flush (1.6 gallons or less) toilets in single-family and multi-family residences.
- b) Programs shall be at least as effective as requiring toilet replacement at time of resale; program effectiveness shall be determined using the methodology for calculating water savings in Exhibit 6 of this MOU.

After extensive review, on July 30 1992, the Council adopted Exhibit 6, "ASSUMPTIONS AND METHODOLOGY FOR DETERMINING ESTIMATES OF RELIABLE SAVINGS FROM THE INSTALLATION OF ULF TOILETS." Exhibit 6 provides a methodology for calculating the level of effort required to satisfy BMP 14.

B. Implementation Schedule

- a) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- b) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.
- c) The coverage requirement for this BMP, as specified in Section C of this Exhibit, shall be realized within 10 years of the date implementation was to commence.

C. Coverage Requirements

Water savings from residential ULFT replacement programs to equal or exceed water savings achievable through an ordinance requiring the replacement high-water-using toilets with ultra-low-flow toilets upon resale, and taking effect on the date implementation of this BMP was to commence and lasting ten years.

D. Requirements for Documenting BMP Implementation

- a) The number of single-family residences and multi-family units in service area constructed prior to 1992.
- b) The average number of toilets per single-family residence; the average number of toilets per multi-family unit.
- c) The average persons per household for single-family residences; the average persons per household for multi-family residences.
- d) The housing resale rate for single-family residences in service area; the housing resale rate for multi-family residences in service area.
- e) The number of ULFT installations credited to the agency's replacement program, by year.
- f) Description of ULFT replacement program
- g) Estimated cost per ULFT replacement.
- h) Estimated water savings per ULFT replacement

E. Criteria to Determine BMP Implementation Status

Calculated ULFT replacement program water savings at the end of each reporting period are within 10% of calculated retrofit-on-resale water savings, using Exhibit 6 methodology and water savings estimates.

F. Water Savings Assumptions

See Exhibit 6.

APPENDIX G

DRAFT WATER CONSERVATION ORDINANCES

[25 PERCENT PROGRAM]

ORDINANCE NO.

AN ORDINANCE OF THE CITY OF MOUNTAIN VIEW
AMENDING SECTION 35.28.4 OF THE MOUNTAIN VIEW CITY CODE,
REGARDING WATER CONSERVATION

NOW, THEREFORE, the City Council of the City of Mountain View does hereby ordain as follows:

Section 1. Section 35.28.4 of Chapter 35 of the Mountain View City Code is hereby amended by adding new subsections to include additional water conservation prohibitions to read as follows:

"SEC. 35.28.4. Nonessential water uses defined.

The following uses of potable water are hereby determined to be nonessential except as further provided herein:

SEC. 35.28.4.1 through SEC. 35.28.4.5. [***]

SEC. 35.28.4.6. Use of potable water, through a running hose, or from faucets or other outlets, for washing buildings, structures, sidewalks, driveways, patios, parking lots or other hard-surfaced areas.

SEC. 35.28.4.7. Use of potable water in the operation of decorative fountains.

SEC. 35.28.4.8. Use of potable water for construction purposes, such as the consolidation of backfill, unless no reclaimed water is reasonably available or other method of construction can be used.

SEC. 35.28.4.9. Hydrant flushing, except where required for public health or safety.

SEC. 35.28.4.10. Draining or refilling of swimming pools, except for health and safety reasons.

SEC. 35.28.4.11. Use of potable water by a single-family residence service connection in excess of an average daily use of seven hundred fifty (750) gallons (thirty (30) units monthly, in two (2) consecutive billing periods)."

SEC. 35.28.4.12. Seasonal hours of irrigation.

Every customer who uses water for the irrigation of lawns, gardens, cemeteries, playfields, parks, median strips, golf courses and landscaping of any type, except for inspection and repairs to irrigation systems, shall water only before 9:00 a.m. or after 6:00 p.m. during the period of the year subject to Pacific Daylight Savings Time and before 9:00 a.m. or after 3:00 p.m. during the period of the year subject to Pacific Standard Time."

Section 2. The provisions of this ordinance shall be effective thirty (30) days from and after the date of its adoption.

Section 3. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the other remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

Section 4. Pursuant to Section 522 of the Mountain View City Charter, it is ordered that copies of the foregoing proposed ordinance be posted at least two (2) days prior to its adoption in three (3) prominent places in the City and that a single publication be made to the official newspaper of the City of a notice setting forth the title of the ordinance, the date of its introduction, and a list of the places where copies of the proposed ordinance are posted.

CSE/ORD-2
013-10-23-95^

[40 PERCENT PROGRAM]

ORDINANCE NO.

AN ORDINANCE OF THE CITY OF MOUNTAIN VIEW
AMENDING SECTION 35.28.4 AND SECTION 8.35 OF THE
MOUNTAIN VIEW CITY CODE, REGARDING WATER CONSERVATION

NOW, THEREFORE, the City Council of the City of Mountain View does hereby ordain as follows:

Section 1. Section 35.28.4 of Chapter 35 of the Mountain View City Code is hereby amended by adding new subsections to include additional water conservation prohibitions to read as follows:

"SEC. 35.28.4. Nonessential water uses defined.

The following uses of potable water are hereby determined to be nonessential except as further provided herein:

SEC. 35.28.4.1. through SEC. 35.28.4.10. [***]

SEC. 35.28.4.11. Use of potable water by a single-family residence service connection in excess of an average daily use of six hundred twenty (620) gallons per day of water in two (2) consecutive billing periods.

SEC. 35.28.4.12. [***]

SEC. 35.28.4.13. Use of potable water for the washing or cleaning of automobiles, trucks, trailers, boats, airplanes and other vehicles or mobile equipment, with the following exceptions:

(a) The washing of such vehicles or mobile equipment on the immediate premises of commercial car washes and commercial service stations using recycled water;

(b) The washing of such vehicles and mobile equipment may be permitted when necessary to protect the public health, safety and welfare.

SEC. 35.28.4.14. Use of potable water to fill newly constructed swimming pools in the City. Notwithstanding the foregoing, the director may exempt public swimming pools

and swimming pools at athletic clubs and gymnasiums serving a broad segment of the community from this section.

SEC. 35.28.4.15. Irrigation of lawns and plants.

Use of potable water by any customer to irrigate lawns or other plants or landscaping which serve as ground covering or turf. It is the intent of this section to prohibit the irrigation of turf and the use of overhead sprinklers in all cases except as otherwise specifically permitted by this code. The irrigation of trees and shrubs shall be allowed during the times is hereby prohibited by Section 35.28.5 of this code, provided that it is accomplished by means of a hand-held bucket, a drip irrigation system or any other low-volume irrigation system, i.e., a system that applies water only within the drip line of a single tree or shrub and without resultant runoff.

In addition, each commercial nursery shall be allowed to apply water to plant material within the confines of that nursery by means of a hose equipped with an automatic shutoff nozzle, so long as water is applied to only one plant or container of plants at a time.

SEC. 35.28.4.16. Deferral of landscape installation during the drought.

In the event of a drought, as declared by the public services director, the installation of all or some landscape plant materials approved and required in connection with the granting of any permit or entitlement under the provisions of Chapter 36 of this Code may be deferred, subject to the direction of the community development director in accordance with guidelines adopted by council resolution. The property owner or the holder of the permit or entitlement shall post and maintain a bond or other security in an amount and in a form subject to the approval of the city, guaranteeing the landscape installation in accordance with the then-current guidelines and the approved landscape plan, upon a determination by the public services director that the water supply crisis has sufficiently subsided to permit such landscape installation. This section shall apply to all projects which have received a permit or other entitlement after _____, and all previously approved projects which will be ready to install landscaping after _____. This section shall automatically expire on _____ unless expressly reinstated by amendment to this section."

Section 2. Mountain View City Code Section 8.35 is hereby amended by adding new subsections to include additional water conservation measures to read as follows:

"SEC. 8.35. Section 323: Added water conservation fixtures.

Section 323 is added to the Uniform Plumbing Code to read as follows:

(a) **Tank-type toilets.** [***]

(b) **Purpose.** It is the purpose of this section to decrease the use of potable water in the City of Mountain View by establishing water conservation plumbing standards for plumbing fixtures retrofitted upon change of ownership or upon bathroom alteration.

(c) **Findings.** The City Council of the City of Mountain View hereby finds and declares that it is necessary to require the installation of "water-conserving plumbing fixtures" in the event of a change of ownership of property or bathroom alterations in the City because of local climatic conditions which have resulted in a serious water shortage in the City.

(d) **Scope.** The provisions of this section apply to the installation of water-conserving plumbing fixtures upon change of ownership or upon bathroom alteration.

(e) **Application.** The provisions of this section shall apply to all persons, customers and property served by the City of Mountain View.

(f) **Definitions.** The following definitions shall apply to this section:

1. "Water-Conserving Plumbing Fixtures" means any toilet using a maximum of 1.6 gallons of water per flush, urinals that use a maximum of 1.0 gallon of water per flush, shower heads with a maximum flow capacity of 2.5 gallons of water per minute, faucets that emit a maximum of 2.5 gallons of water per minute, and shutoff valves for residential reverse osmosis systems.

2. "Existing Plumbing Fixtures" means any toilet using 3.5 or more gallons of water per flush, urinals using more than 1.0 gallon per flush, shower heads with a flow capacity of 2.5 gallons of water per minute, faucets that emit more than 2.2 gallons of water per minute, and residential reverse osmosis systems not equipped with shutoff valves.

3. "Retrofit" means replacing "Existing Plumbing Fixtures" with "Water-Conserving Plumbing Fixtures."

4. "Change or Ownership" means a transfer of present interest in real property, or a transfer of the right to beneficial use thereof, the value of which is substantially equal to the proportion of the ownership interest transferred.

5. "Existing Structure" means either of the following:

a. Any structure built and available for use or occupancy on or before January 1, 1983 which is equipped with a toilet having 3.5 or more gallons of water per flush or a urinal using more than 1.0 gallon of water per flush; or

b. Any structure built and available for use or occupancy on or before December 1, 1991 which is equipped with a shower head with a flow capacity of more than 2.5 gallons of water per minute, a faucet that emits more than 2.2 gallons of water per minute or a residential reverse osmosis system not equipped with shutoff valves.

6. "Bathroom Alteration" means any alteration or addition of a bathroom that would necessitate obtaining a plumbing permit for replacement of a toilet(s) as required by the Uniform Plumbing Code, as incorporated into Chapter 8 of the Mountain View City Code.

7. "Administrative Authority" means the building official of the City of Mountain View or his/her designee.

8. "Water Conservation Certificate" means a certificate acknowledging that installation of Water-Conserving Plumbing Fixtures has been completed and has been submitted to the Administrative Authority by a transfer upon Change of Ownership or by a property owner or manager upon Bathroom Alteration.

(g) **Retrofit upon change of ownership.** Effective _____ all Existing Plumbing Fixtures in Existing Structures, including residential, commercial and industrial structures, shall, at the time of Change of Ownership, be Retrofitted, if not already done, exclusively with Water-Conserving Plumbing Fixtures. At the discretion of the transferor, compliance with this section may be included as a condition of the escrow, and the costs of compliance may be paid from the proceeds of sale for completion of the work required.

(h) **Retrofit upon bathroom alteration.** Effective _____ all structures, including residential, commercial and industrial structures, shall, upon Bathroom Alteration, be Retrofitted exclusively with Water-Conserving Plumbing Fixtures.

(i) **Retrofit exemption.** The Administrative Authority may grant an exemption in the following instance:

1. Unavailability of Water-Conserving Plumbing Fixtures to match defined historic architectural style (i.e., Victorian, Mission), fitted with authentic plumbing fixtures, in a local, State or Federally designated building of historic significance.

2. When exemption would be permitted or required by State law.

(j) **Compliance.**

1. It shall be the transferor's responsibility, upon Change of Ownership, to obtain any necessary plumbing replacement of toilets as required by the Uniform Plumbing Code, as incorporated into Chapter 8 of the Mountain View City Code.

2. It shall be the title holder's responsibility, upon Bathroom Alteration to obtain any necessary plumbing permits for replacement of toilets required by the Uniform Plumbing Code, as incorporated into Chapter 8 of the Mountain View City Code.

(k) **Self-verification.**

1. Upon Retrofitting with Water-Conserving Plumbing Fixtures, the transfer, or upon Change of Ownership, or the title holder, upon Bathroom Alteration, shall submit to the Administrative Authority a "Water Conservation Certificate," the form of which is available from the Administrative Authority, verifying that the Water-Conserving Plumbing Fixtures have been installed.

2. "Water Conservation Certificates" shall be maintained by the Administrative Authority in order to provide future verification that Water-Conserving Plumbing Fixtures have been installed.

3. "Water Conservation Certificates" shall also be available to those who voluntarily install Water-Conserving Plumbing Fixtures or who have installed Water-Conserving Plumbing Fixtures prior to January 1, 1992.

(l) **Enforcement.**

It is unlawful for any person to cause or commit a violation of this section. It shall be unlawful for any person to remove or cause the removal of Water-Conserving Plumbing Fixtures in violation of this section.

In addition to any other remedy provided by law, any provision of this section may be enforced by injunction issued by the Superior Court upon a suit brought by the City of Mountain View."

Section 2. The provisions of this ordinance shall be effective thirty (30) days from and after the date of its adoption.

Section 3. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the other remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

Section 4. Pursuant to Section 522 of the Mountain View City Charter, it is ordered that copies of the foregoing proposed ordinance be posted at least two (2) days prior to its adoption in three (3) prominent places in the City and that a single publication be made to the official newspaper of the City of a notice setting forth the title of the ordinance, the date of its introduction, and a list of the places where copies of the proposed ordinance are posted.

CSE/ORD-2
013-10-23-95^

[50 PERCENT PROGRAM]

ORDINANCE NO.

AN ORDINANCE OF THE CITY OF MOUNTAIN VIEW
AMENDING SECTION 35.28.4 AND ADDING SECTION 35.28.9 OF THE
MOUNTAIN VIEW CITY CODE, REGARDING WATER CONSERVATION

NOW, THEREFORE, the City Council of the City of Mountain View does hereby ordain as follows:

Section 1. Section 35.28.4 of Chapter 35 of the Mountain View City Code is hereby amended by adding new subsections to include additional water conservation measures to read as follows:

"SEC. 35.28.4. Nonessential water uses defined.

The following uses of potable water are hereby determined to be nonessential except as further provided herein:

SEC. 35.28.4.1. through SEC. 35.28.4.10. [*]**

SEC. 35.28.4.11. Use of potable water by a single-family residence service connection in excess of an average daily use of five hundred (500) gallons per day of water in two (2) consecutive billing periods.

SEC. 35.28.4.12. through SEC. 35.28.4.16. [*]**

SEC. 35.28.4.17. Use of potable water to fill existing swimming pools and spas shall be prohibited, unless the pool or spa is equipped with a cover."

Section 2. Section 35.28.9 of Chapter 35 of the Mountain View City Code is hereby added to read as follows:

"SEC. 35.28.9. Moratorium on new or expanded water service.

(a) **Legislative findings.** The city council of the City of Mountain View declares and finds that, as a result of drought conditions, a water shortage emergency exists in the city, so that the ordinary demands of water consumers cannot be satisfied without depleting sources of water needed for human consumption, sanitation and fire protection. Therefore, the council finds that it is necessary and appropriate to enact a moratorium on new or expanded water service to consumers within the corporate

limits of the city in order to protect the public health, safety and welfare until the council has, by ordinance, declared the present water shortage emergency to be resolved.

(b) **Moratorium on new or expanded water service.** Effective _____, the city shall not provide new or expanded water service or sell meters for water service connections to consumers in the city after the effective date of this ordinance, except to consumers who have, previously been issued valid building permits by the city which have not expired or been revoked. Notwithstanding the foregoing, the city may supply new or expanded water service to public agencies, including, but not limited to, schools, fire stations, police stations and other facilities which serve the community, such as hospitals, as necessary to protect the public health, safety and welfare.

(c) **Water not supplied for new plantings.** Effective _____, the city shall not provide water for use on any new plantings or landscaping installed after the effective date of this ordinance.

(d) **Moratorium on annexations outside the city's water service area.** Effective _____, the city shall not annex territory located outside of its water service area."

Section 3. The provisions of this ordinance shall be effective thirty (30) days from and after the date of its adoption.

Section 4. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the other remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections subsections, sentences, clauses or phrases be declared unconstitutional.

Section 5. Pursuant to Section 522 of the Mountain View City Charter, it is ordered that copies of the foregoing proposed ordinance be posted at least two (2) days prior to its adoption in three (3) prominent places in the City and that a single publication be made to the official newspaper of the City of a notice setting forth the title of the ordinance, the date of its introduction, and a list of the places where copies of the proposed ordinance are posted.

CSE/ORD-2
013-10-23-95

APPENDIX H

RECYCLED WATER ORDINANCE

ORDINANCE NO. 14.04

AN ORDINANCE ADDING ARTICLE V TO CHAPTER 35 OF THE MOUNTAIN VIEW CITY CODE RELATING TO THE USE OF RECYCLED WATER FOR IRRIGATION

NOW, THEREFORE, the City Council of the City of Mountain View does hereby ordain as follows:

Section 1. Article V is hereby added to Chapter 35 of the Mountain View City Code to read as follows:

"SEC. 35.100.1. Findings.

Potable water is one of our most precious natural resources and is becoming increasingly scarce in the semiarid State of California. The use of treated, nonpotable water for construction and irrigation will increase the amount of potable water available for other uses in the city. The City of Mountain View is dedicated to conserving the potable water supply. Recycled water is a sustainable water source that reduces potable water consumption and is not subject to rationing during drought. After careful study, the city council has determined that recycled water shall be used within the boundaries of the Shoreline Regional Park Community for irrigation purposes whenever it is available and beneficial to the customer.

This article will implement an important program that will assist the Shoreline Regional Park Community in preserving this precious commodity. In adopting this program, the council has balanced the needs of all water users and through this implementation strategy will allow water users sufficient flexibility to meet their potable and nonpotable water needs.

SEC. 35.100.2. Converting existing potable water users to recycled water.

Within the boundaries of the Shoreline Regional Park Community, retail, commercial and industrial customers to be served by recycled water in the initial conversion have been identified in the "Regional Water Recycling Facilities Planning Study" dated January 2004. This study may be amended from time to time to add additional customers. These customers will be notified by mail that a conversion to recycled water for irrigation purposes is required, along with the conditions of use, pricing and construction schedule. Recycled water customers may file a request for an exemption or adjustment from these requirements with the director of public works.

SEC. 35.100.3. Use of recycled water in new construction.

All applications for land use permits, building permits and other discretionary actions within the boundaries of the Shoreline Regional Park Community, filed after the adoption of this ordinance, shall include the following:

- a. Incorporation of recycled water usage into the design of landscape and irrigation systems.
- b. Consideration of plants suitable for irrigation with recycled water.
- c. The installation of the infrastructure necessary to connect the irrigation system to the city's recycled water supply.
- d. The use of recycled water in lieu of potable water during construction activity.

The city maintains the right to require recycled water use for additional purposes as appropriate.

SEC. 35.100.4. Exemptions and adjustments.

An application for an exemption or an adjustment to the requirement to use recycled water shall be made to the director of public works. Requests for an exemption or adjustment may be made consistent with state law and shall be based on the finding by the director that the use of recycled water demonstrates an adverse effect to the applicant's landscaping installed prior to the effective date of this ordinance. The director of public works may also consider any additional factors, including any special costs or hardships which may be created by the use of recycled water. A written determination will be made on all requests for exemptions or adjustments within ten (10) business days and mailed to the applicant.

SEC. 35.100.5. Administrative provisions.

The director of public works shall establish written application and appeals procedures and may promulgate guidelines for the implementation of this program.

SEC. 35.100.6. Appeals.

Denial of any application for an exemption and/or adjustment to the provisions of recycled water use may be appealed to the city manager, whose decision shall be final. An application for appeal shall be filed with the city clerk in writing within ten (10) business days after the director of public works' decision and shall state the specific grounds for the appeal. The city manager shall hear the appeal within sixty (60) calendar days after the appeal has been filed with the city clerk and shall issue a written decision within thirty (30) days.

SEC. 35.100.7. Failure to comply with this article.

In addition to existing penalties in state and local law for violation of the provisions of this article, the director of public works may assess the following penalties, subject to the appeal provisions set forth above:

- a. A water service surcharge of fifty percent (50%) of the general water service rate as set forth in Mountain View City Code Section 35.27 to use potable water for irrigation.
- b. Continued use of potable water for irrigation, after written warning or warnings by the director, may result in the discontinuation of water service supplied for irrigation by the City of Mountain View following a noticed hearing as set forth in Sec. 35.100.6. A charge as set forth in the city's master fee schedule shall be paid prior to the reactivation or restoration of water service."

Section 2. The provisions of this ordinance shall be effective thirty (30) days from and after the date of its adoption.

Section 3. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the other remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

Section 4. Pursuant to Section 522 of the Mountain View City Charter, it is ordered that copies of the foregoing proposed ordinance be posted at least two (2) days prior to its adoption in three (3) prominent places in the City and that a single publication be made to the official newspaper of the City of a notice setting forth the title of the ordinance, the date of its introduction, and a list of the places where copies of the proposed ordinance are posted.

The foregoing ordinance was regularly introduced at the Special Meeting of the City Council of the City of Mountain View, duly held on the 12th day of October, 2004, and thereafter adopted at the Regular Meeting of said Council, duly held on the 26th day of October, 2004, by the following roll call vote:

AYES: Councilmembers Galiotto, Kasperzak, Neely, Perry and Mayor Pear

NOES: None

ABSENT: Councilmembers Stasek and Zoglin

NOT VOTING: None

ATTEST:

APPROVED:

ANGELITA M. SALVADOR
CITY CLERK

MATT PEAR
MAYOR

I do hereby certify that the foregoing ordinance was passed and adopted by the City Council of the City of Mountain View at a Special Meeting held on the 26th day of October, 2004, by the foregoing vote, and was published in the *San Jose Post Record* by reference on the 22nd day of October, 2004, and posted in three prominent places in said City.

City Clerk
City of Mountain View

~~JLQ/6/ORD~~
010-10-12-04e^

APPENDIX I

WATER SUPPLY LETTER FROM THE SANTA CLARA VALLEY WATER DISTRICT

October 11, 2005

Mr. David Serge
Utilities Manager
City of Mountain View
231 N. Whisman Rd.
Mountain View, California 94043-3997

Subject: Water Demand and Conservation Projections used in Santa Clara Valley Water District's 2005 Urban Water Management Plan


Dear Mr. Serge:

The Santa Clara Valley Water District (District) has prepared county-wide water demand and conservation projections in five-year increments to year 2030 for use in the District's 2005 Urban Water Management Plan (UWMP). These projections are based upon ABAG 2005 census tract data, San Francisco Public Utilities Commission projections, and water use projections provided by major retailers. We are providing you with these projections (Table 1) so that you can use them in the City of Mountain View's 2005 UWMP. Additionally, Table 2 provides projected 2030 water demand information submitted by each major water retailer. We have compared these demands to the District's estimated County-wide demand projected every 5 years to 2030.

The District's Integrated Water Resources Planning Study (IWRP 2003) found that shortages up to 5% could be managed through demand reduction programs and voluntary cutbacks without significant economic losses to the community. The District uses this as a long-term investment planning goal to ensure that in any given year there is never a water shortage greater than 5% of the total demand in that year. IWRP 2003 provides a framework for additional water supply under a variety of future scenarios. These additional investments together with the "no regrets" water portfolio allow the District to reliably meet retailer projected demands to 2030. As part of the UWMP 2005, we performed long term water supply modeling and analysis that show that countywide demands can reliably be met under normal, dry, and multiple dry year scenarios.

The District's 2005 UWMP has additional information regarding existing and future supplies. The Draft UWMP can be found on our website - www.valleywater.org. If you have any questions or need additional information, please don't hesitate to call me at 408-265-2607, extension 3751.

Sincerely,



James S. Crowley
Water Supply Sustainability Planning

Table 1

Projected Water Demand and Conservation Projections (af/year)

Year	2004 (ACTUAL) ¹	2005	2010	2015	2020	2025	2030
M&I Demand ²	351,600	360,558	385,194	414,645	441,445	466,600	492,371
Agricultural Demand ³	29,000	30,000	30,000	30,000	30,000	30,000	30,000
Subtotal All Demand	380,600	390,558	415,194	444,645	471,445	496,600	522,371
Post 2000 Standard Conservation Programs, No Washer Standard ⁴	(24300) ⁶	12,984	23,191	30,065	37,983	42,790	45,200
Added Conservation 2003 draft IWRP No Regrets Option ⁵	N/A	0	10,000	15,000	20,000	25,000	28,000
Total Water Conservation Savings – 2000 Base year	N/A	12,984	33,191	45,065	57,983	67,790	73,200
Total County-wide Demand	380,600	377,574	382,703	395,980	405,463	425,810	449,171

¹ 2004 Calendar Year Recorded Use by SCVWD

² SFPUC Customer Demand + SCVWD Demand for Non-SFPUC Retailers - ABAG Projections 05

³ Agricultural demand projections are based upon metered and reported use of 2004 agricultural water. They were held constant to 2030.

⁴ District Added Water Conservation Savings using existing programs and regulations. Realized savings from 1992 -2000 removed as 2000 is base year water use

⁵ District Additional Water Conservation Savings from IWRP 2003 No Regrets Building Blocks

⁶ 1992 to 2000 Water Conservation Program Savings, realized in actual water use.

Table 2

Retailer/SCVWD Demand Projections

RETAILER/SCVWD DEMAND PROJECTIONS IN ACRE-FEET 2030 COMPARISON				
	<u>Retailer Projections</u>		<u>SCVWD Projections</u>	
Agency	2030 Demand	Source		
Milpitas, City of	21,600	SFPUC 03 ¹		
Mountain View, City of	17,900	SFPUC 03		
Palo Alto, City of	17,900	SFPUC 03		
Purissima Hills Water District	3,700	SFPUC 03		
Santa Clara, City of	40,000	SFPUC 03		
Stanford University	8,000	SFPUC 03		
Sunnyvale, City of	33,000	SFPUC 03		
Gilroy, City of	15,000	Master Plan 04		
Morgan Hill, city of	13,400	Master Plan 02		
San Jose Water Co	214,500	UWMP 05 Draft		
San Jose Municipal Water (minus CVSP)	49,800 ²	UWMP 05 Draft		
Great Oaks Water Co. (minus CVSP)	10,700 ³	UWMP 05 Final		
Cal Water Service Co.	15,100	UWMP 04 Final		
Coyote Valley Specific Plan	18,500	SCVWD ⁴		
Subtotal	479,100		475,400	99.2%
County Wide				
Independent Groundwater Pumping	17,000		17,000	
Subtotal	496,100		492,400	
Agriculture	30,000		30,000	
County Wide Conservation	-73,200		-73,200	
Total	452,900		449,200	99.2%

¹ San Francisco Public Utility Commission, SFPUC Wholesale Customer Water Demand Projections (URS 2004). Pre-conservation data obtained from Bay Area Water Supply and Conservation Agency (BAWSCA)

² San Jose Municipal Water demand in their draft UWMP was 68,300. The CVSP development was included in their demand projections. Since the District is forecasting CVSP demand separately, it was deducted from San Jose's projections.

³ Great Oaks Water demand in the UWMP for 2030 was 29,201 Acre-feet. The CVSP development was included in their population projection. Since the District is forecasting CVSP demand separately, it was deducted from Great Oaks projections.

⁴ Santa Clara Valley Water District April 2005 Water Supply Availability Analysis for CVSP (projected range of 16,000 to 20,000 af/yr)

APPENDIX J

CALIFORNIA URBAN WATER MANAGEMENT PLAN ACT

Established: AB 797, Klehs, 1983

Amended: AB 2661, Klehs, 1990

AB 11X, Filante, 1991

AB 1869, Speier, 1991

AB 892, Frazee, 1993

SB 1017, McCorquodale, 1994

AB 2853, Cortese, 1994

AB 1845, Cortese, 1995

SB 1011, Polanco, 1995

AB 2552, Bates, 2000

SB 553, Kelley, 2000

SB 610, Costa, 2001

AB 901, Daucher, 2001

SB 672, Machado, 2001

SB 1348, Brulte, 2002

SB 1384, Costa, 2002

SB 1518, Torlakson, 2002

AB 105, Wiggins, 2004

SB 318, Alpert, 2004

CALIFORNIA WATER CODE DIVISION 6 PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATION AND POLICY

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in

its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
 - (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
 - (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
 - (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
 - (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.
- (b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

CHAPTER 3. URBAN WATER MANAGEMENT PLANS

Article 1. General Provisions

10620.

- (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
- (d)
 - (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.
 - (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
- (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
- (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621.

- (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
- (c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

- (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.
- (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:
 - (1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.
 - (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.
 - (3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

- (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
- (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:
 - (1) An average water year.
 - (2) A single dry water year.
 - (3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

- (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (e)
 - (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:
 - (A) Single-family residential.
 - (B) Multifamily.
 - (C) Commercial.
 - (D) Industrial.
 - (E) Institutional and governmental.
 - (F) Landscape.
 - (G) Sales to other agencies.
 - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
 - (I) Agricultural.
 - (2) The water use projections shall be in the same five-year increments described in subdivision (a).

- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
 - (A) Water survey programs for single-family residential and multifamily residential customers.
 - (B) Residential plumbing retrofit.
 - (C) System water audits, leak detection, and repair.
 - (D) Metering with commodity rates for all new connections and retrofit of existing connections.
 - (E) Large landscape conservation programs and incentives.
 - (F) High-efficiency washing machine rebate programs.
 - (G) Public information programs.
 - (H) School education programs.
 - (I) Conservation programs for commercial, industrial, and institutional accounts.
 - (J) Wholesale agency programs.
 - (K) Conservation pricing.
 - (L) Water conservation coordinator.
 - (M) Water waste prohibition.
 - (N) Residential ultra-low-flush toilet replacement programs.
 - (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
 - (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

- (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
 - (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
- (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council

in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

- (k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c), including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
- (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.
- (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including,

but not limited to, a regional power outage, an earthquake, or other disaster.

- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
- (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
- (f) Penalties or charges for excessive use, where applicable.
- (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

- (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
- (b) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
- (c) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

- (d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
- (e) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
- (f) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.
- (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5 Water Service Reliability

10635.

- (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.
- (b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

- (c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
- (d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644.

- (a) An urban water supplier shall file with the department and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be filed with the department and any city or county within which the supplier provides water supplies within 30 days after adoption.
- (b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the

status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has filed its plan with the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

CHAPTER 4. MISCELLANEOUS PROVISIONS

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities

Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

10657.

- (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.
- (b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

APPENDIX K

GLOSSARY

GLOSSARY

Acre-Foot (af): The amount of water needed to cover an acre 1' deep (325,900 gallons).

An acre-foot can support the annual indoor and outdoor needs of between one and two households per year, and, on average, three acre-feet are needed to irrigate one acre of farmland; enough to cover a football field 1' deep.

AF/D: Acre-feet per day.

AF/Y: Acre-feet per year.

Aquifer: A geologic formation of sand, rock and gravel through which water can pass and which can store, transmit and yield significant quantities of water to wells and springs.

Available Supply: The maximum amount of reliable water supply, including surface water, groundwater and purchases under secure contracts.

Average-Day Demand: A water system's average daily use based on total annual water production.

Baseline: Existing and adopted supplies, infrastructure, programs and agreements.

Best Management Practice (BMP): A measure or activity that is beneficial, empirically proven, cost-effective and widely accepted in the professional community.

Demand Forecast: A projection of future water demand that can be made on a system-wide or customer-class basis.

Demand Management: Measures, practices or incentives deployed by water utilities to permanently reduce the level or change the pattern of demand for a utility service.

Domestic: Residential living facilities.

Evapotranspiration: Water losses from the surface of soils and plants.

Imported Water: Water that has originated from one hydrologic region and is transferred to another hydrologic region.

Integrated Water Resource Planning: An open and participatory planning process emphasizing least-cost principles and a balanced consideration of supply and demand management options for meeting water needs.

Multiple Dry-Year Period: The average annual supply that could be expected if the 1987 to 1992 hydrology was repeated and was used for the multiple dry-year periods.

Normal Year: A year in the historical sequence that most closely represents median runoff levels and patterns.

Potable Water: Water that does not contain pathogens, contamination, minerals or infective agents and complies with the drinking water standards.

Recycled Water: Wastewater that becomes suitable for a specific beneficial use as a result of treatment.

Single Dry Year: A year with the minimum usable supply. The hydrology of 1977 is the driest year of record and represents the minimum total supply that has been observed in the historical record.

Ultra-Low-Flush Toilet (ULFT): A toilet that uses not more than 1.6 gallons per flush.

Unaccounted-for Water: The amount of water not accounted for following a comparison of production and billing less known or estimated losses and leaks.

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APPENDIX L

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